Integrated rural development a case study of monastir governorate Tunisia

Harrison, Ian C.

INTEGRATED RURAL DEVELOPMENT

A CASE STUDY OF

MONASTIR GOVERNORATE

TUNISIA

IAN C. HARRISON

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ABSTRACT

The Tunisian government has adopted an integrated rural development programme to tackle the problems of the national rural sector. The thesis presents an examination of the viability and success of the programme with specific reference to the Governorate of Monastir.

An IRD programme is justified as a strategy equipped to tackle the complex matrix of problems encountered in the rural sector of a developing country. A model for such a programme is defined as being based on five components; economic, social, institutional, infrastructural and spatial.

The problems encountered in the Tunisian rural sector are extremely varied and highly complex, including limited physical resources, abundant human resources and a poorly developed economic base. The national government has made various unsuccessful attempts to solve the problems prior to adopting an IRD strategy in 1973.

Against a background of limited resources, the implementation of the IRD programme in Monastir has focused on three aspects; the creation and consolidation of employment, vocational training and the improvement of rural living standards. Progress in these areas has met with mixed success. Close investigation at the village level, however, reveals a generally successful implementation of rural development, particularly evident in the increasing popularity of the village as a place in which to live.

One of the major problems with the implementation of the rural development programme has been the allocation of priorities and the failure to discern major objectives. This has been particularly true in the development of agriculture where superficial temporary measures and uneconomic prestige projects have been applied instead of attempts being made to tackle fundamental causes of the problems.

Overall, however, the Tunisian rural development programme as studied in Monastir Governorate illustrates the viability and potential success of IRD as a strategy for rural development.

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ABBREVIATIONS

AFI	Agence Foncière Industrielle
API	Agence de Promotion des Investissements
BNT	Banque Nationale de Tunisie
CLCM	Caisse Locale de Crédit Mutuel
CRDA	Commissariat Régional au Développement Agricole
DAT	Direction d'Aménagement du Territoire
FOPRODI	Fonds de Promotion et de Décentralisation Industrielle
FOSDA	Fonds Spécials de Développement Agricole
INRAT	Institut National de Recherche Agronomique, Tunis
IRD	Integrated Rural Development
OAR	Office d'Animation Rural
OC	Office des Céréals
ODI	Overseas Development Institute
OEP	Office d'Elevage et du Pâturage
OMIVAJ	Office de Mise en Valeur de Jendouba
OMIVAL	Office de Mise en Valeur de Lakhmès
OMIVAN	Office de Mise en Valeur de Nebhana
OMVVM	Office de Mise en Valeur de la Vallée Medjerda
ONH	Office National de l'Huile
ONPFP	Office National du Planning Familial et de la Population
OTD	Office des Terres Domaniales
OTT	Office de Tourism Travail
OTTEEFP	Office des Travailleurs Tunisiens à l'Etranger de l'Emploi et de la Formation Professionnelle
p.i.	périmètre irrigué
p.p.i.	périmètre publique irrigué
PAM	Programme d'Alimentation Mondiale
PDR	Programme du Développement Rural
PSD	Parti Socialiste Destourien
SONEDE	Société National des Exploitation et de Distribution des Eaux
STEG	Société Tunisien d'Electricité et du Gaz
STS	Société Transport de Sousse
TD	Tunisian Dinar (1 TD = £0.831 Jan 1980)
UCP	Unité Coopérative de Production
UGTT	Union Général des Travailleurs Tunisiens
UNDP	United Nations Development Programme

CHAPTER ONE

INTRODUCTION

Third World First World, under-developed developed, less developed more developed, North South; regardless of labels, there can be no disputing the very real fact that a substantial majority of the world's population still live in conditions far below the standard experienced by the minority in the so-called developed world. The problem has long been recognised, and the debate as to how the differential can best be reduced is voluminous. There is no doubt, however, that until the countries of the developed world reorientate their political and economic outlook to incorporate the less developed countries into a global strategy, can any real and long lasting solution to the North/South differentials be envisaged. Such reorientation has been cog ently argued for by the Brandt Commission, but in the light of international reaction since the publication of its Report, it will be many years before significant moves can be expected along these lines (Independent Comm. on Development Issues 1980).

Although global realignment must be the ultimate objective, the problems of the Third World are pressing now. Consequently, short and medium term palliatives must be investigated and implemented. The wealthy nations of the world have a great responsibility in this respect. The financial resources, the technical knowledge and the skilled manpower are all available in the developed countries, and some of these must be directed to the easing of the multitude of problems encountered in the developing world. The responsibility cannot, however, rest entirely with the rich nations; governments and peoples of poor countries must contribute to their own

development progress. There has to be an element of self help, else the dependency relationships that have caused so much difficulty in the past will continue, but in a different form.

Certainly, most developed countries have contributed to some extent to the development of the less favoured areas of the world. Whether they have contributed enough is highly debatable. The United Nations has set the not unrealistic objective of getting all developed countries to contribute at least 0.7% of their GNP to the assistance of Third World countries; a pitiable number of nations have managed to achieve this target. Nevertheless, international contribution to development has taken place.

During the 1950s and 1960s, Third World development was based very much on the economic growth paradigm. This strategy entailed capital-intensive, urban-industrial developments and was heavily reliant on transfers of aid from developed countries (Lipton 1976). The rationale for the approach was based on the belief that if investment were to be focused on growth generating sectors (industry), then a snow-ball effect would be instigated that would ultimately result in the benefits of development spreading to the rest of the country. The importance attached to this particular philosophy is reflected in the fact that the whole orientation of the UN 1st Development Decade was hinged on such economic growth. It was a strategy that was well researched and had considerable backing. (see for example, Friedmann 1966, Hirschman 1958, Myrdal 1957).

However, it soon became apparent that the strategy was not working; the rich were getting richer whilst the poor were getting poorer. Urban rural differentials were increasing, not reducing. The spread effects simply were not happening (Grant 1973). In addition, there was a tendency for

governments of developing countries to become over dependent on incoming aid and to not instigate or implement actions to assist the progress of development in their own countries. Consequently, by the end of the 1960s, considerable thought was being directed to alternative development strategies.

Although the direction taken by development philosophy at the beginning of the 1970s became somewhat confusing, two features stand out clearly. The first is the decline of emphasis on the economic growth paradigm, and the second is the increasing consideration given to rural development. Of major significance to the latter was a set of speeches given by Robert McNamara, President of the World Bank, in the early 1970s (World Bank 1975), in which he directed attention to the plight of the rural poor who comprised some 80% of the population of the underdeveloped nations.

McNamara was not the only person to recognise the difficulties in the rural sector of developing countries. In 1969 the fundamental principles of rural development were defined (Philip 1969), and from this time literature devoted to the problems of the rural sector mushroomed. The initial idea was to arrest the concentration of investment on urban areas and transfer it to rural areas. The question became how best to do this without so diversifying limited resources that they lost all effectiveness. To a certain extent, the ideas that emerged were strongly influenced by political ideology, but nevertheless a number of distinct strategies aimed at rural development can be discerned. Three distinct groups of strategies or approaches to rural development have been described: the technocratic, the reformist and the radical - all of which form points on a spectrum (Griffin 1974).

The technocratic strategy is based on the prime objective of increasing agricultural output. The economic system is

justified essentially in terms of a liberal, capitalist ideology with the emphasis on competition and free markets. In practice, property ownership is highly concentrated and thus the benefits of technical change and higher output accrue in the first instance to the landowning élite and other property owners. Inequality of income is welcomed since it is assumed that the rich will save a greater proportion, which will lead to more rapid accumulation and growth. In effect there is very little to distinguish this strategy from that of the growth paradigm of the 1960s, except that the emphasis is given to the rural sector. Griffin cites the Phillipines, Brazil and the Ivory Coast as instances where such a strategy has been adopted.

At the other end of the spectrum is the radical strategy which seeks to achieve rapid social change and a redistribution of political power. Secondary objectives are a redistribution of wealth and income, and lastly comes higher production. The strategy is supported by the ideology of socialism. Agrarian socialism is based on the assumption that it is possible to mobilise an untapped resource potential - namely human labour. This can be done only if social and economic inequalities are reduced. Rough equality is achieved through the abolition of private property in land and the establishment of cooperatives and communes which favour small peasants and landless labourers. Under this strategy attention is focused on the local level rather than the national, as in China and Cuba.

The above two extremes are both unsatisfactory. The technocratic strategy has been shown not to work when it was applied to urban industrial development, and there is no reason to suggest that in terms of overall development it will be any more successful in the long term when applied to

rural development. It is of little use to focus all attention on the rural sector to the detriment of the urban, the two must be developed complementary to each other. Primarily, however, the strategy is rejected through its failure to either destroy or modify the land-based power élite that controls the economy essentially for its own ends. The majority of the population, for whom poverty is a reality, are expected to 'make do' whilst awaiting the hoped-for (but not guaranteed) long term returns from a capitalist-oriented development.

On the other hand, the radical strategy can only be acceptable or applicable in a limited number of societies. The political control it often implies is possibly too high a price to pay for the potential benefits. It is also unrealistic to expect all the Third World countries to concentrate on the micro-level for development. Few countries can afford to take the introspective attitude implicit in this strategy.

One is thus left with the reformist, or middle road strategy, which is basically a compromise between the two extremes. Its priority is the redistribution of income to some sections of the community, particularly the middle peasantry, and attributes lower priority than the technocratic strategy to increased output. Attempts are made to reconcile greater equity with faster growth by changing agricultural institutions. The ideology associated with this type of rural development is usually nationalist and occasionally populist. The dominant land tenure tends to be family farms, although there is also scope for cooperatives. Whilst it is not a strategy that will suit all developing countries, it will be shown in this thesis that a specific approach to rural development, constructed within the framework of the reformist strategy, has potential for the successful development of the

rural sector of a developing nation.

A number of alternative approaches to rural development are available within the broad outline of the reformist strategy, but one of the major alternatives, upon which attention is focued, is that of integrated rural development (IRD). IRD has been formulated in recognition of the complex nature of rural development. It seeks to meet the needs of the target population, to create and maintain institutions crucial for the continued momentum of development, to integrate the various institutions and bodies relevant to rural development and, finally, to integrate the rural population with the rest of the national economy. In Griffin's terms IRD lies in the centre of the reformist strategies and is firmly based on nationalist ideals. Its greatest strength is that it seeks an ambitious overall approach to the multitude of rural development problems, rather than tackling them in a piecemeal fashion as suggested by other reformist strategies.

Whilst it is in no way suggested that IRD is the ultimate solution to the problems of rural development throughout the Third World, it is the purpose of this thesis to demonstrate that, under certain conditions, it is a real and viable development strategy. With reference to Tunisia, and in particular the governorate of Monastir, it is demonstrated in succeeding chapters that the IRD policies adopted by the Tunisian government have shown positive results.

The discussion on the exact definition of IRD is extensive. As a concept it can be traced back to the early community development projects in India, since which time it has been considerably modified and elaborated. Four major streams of IRD philosophy are now discernible. Chapter Two thus seeks to clarify the definition of IRD as a development strategy. It reviews its origins, traces its development and

examines in detail the four alternative definitions before finally proving just one of the alternatives to be of any merit. A precise definition of IRD is then presented, including an examination of its constituent parts. As a result of this discussion a model for IRD is thus constructed which, it is argued, forms the ideal basis for an integrated rural development programme. It is in the light of this model that the Tunisian rural development programme is analysed.

Since June 1973 Tunisia has undertaken a rural development programme that has been recognizant of the complexities of the national rural problem. Decree No. 310 - 73 instituted the 'programme d'animation rural et de promotion de l'emploi', which was to function within the context of the National Development Plans. The overall programme is based on an integrated rural development strategy in that it seeks to: i) co-ordinate a multi-sectoral approach to the many aspects of the rural problem and; ii) increase the integration of the rural sector to the national socio-economic environment. In this, the Tunisian IRD programme is thus seen as a means and an end.

Prior to a presentation of the Tunisian programme, a detailed analysis is made of the Tunisian rural problem. The justification for this is two-fold. Firstly, it is unrealistic to examine the merits or effectiveness of the rural development programme without prior knowledge of the problems that the programme must tackle. As intimated above, the matrix of problems in any developing country is unique to that country, although it may share common elements with others. Consequently, a full analysis and study of the inter-related Tunisian problems is necessary before proceeding with the discussion of the Tunisian IRD programme. Secondly, such a comprehensive examination of the problems in rural Tunisia

is lacking amongst current literature. Although a number of works have dealt with specific aspects, such as agriculture (Kassab and Sethom 1980), employment (Mtar 1977), society (Abu - Zahra 1972) and rural industry (Trabelsi 1975), none deal comprehensively with the whole problem, and virtually none have been published in English.

The examination of the rural problem is followed by an account of previous attempts by the Tunisian government to tackle rural development. Reference is made to the various stages in the history of Tunisian economic policy and their relevance to rural development, with particular emphasis on the impact of the co-operative movement of the 1960s. This discussion places the current integrated rural development strategy of the government into its overall context. The bulk of Chapter Four, however, comprises an examination of the components, budget and institutional framework of the national rural development programme.

Having presented the national level view, attention is focused on the governorate of Monastir in order to make a detailed assessment of the means of implementation and the level of success experienced by the Tunisian IRD programme. It is useful at this juncture, however, to include a justification for the selection of Monastir governorate for the study of rural development. The initial objective of the research had been the investigation of rural development throughout the Sahel. This region had been selected because it represents an area of great variety in which urban and rural economies are both important and play strong, symbiotic roles. The Sahel is also a well-defined region in all senses of the word and, as such, appealed as an area in which all facets of rural development could be investigated. However, after preliminary studies, it was realised that the area was far too large to be

covered alone. The option became one of either studying the Sahel on a systematic/thematic basis, investigating, for example, an irrigated area at Sidi Bou Ali, community development at Sahline and industrialisation in Ksar Hellal, or of taking just one of the three Sahel governorates and studying it comprehensively, treating it as representative of the region as a whole.

Intellectually, the latter option was of greater appeal as it gave the opportunity for assessing how all elements of the development programme interlocked, and as a great deal of assistance and information was provided by the governorate officials at Monastir, it was decided to focus attention on this governorate alone. With hindsight, the decision has not been regretted. Although Monastir governorate is a relatively highly-urbanised area, the rural sector continues to play a real and important role. Many of the national rural problems are encountered on a smaller scale within the governorate and the area was not too large to be studied alone. In addition, the political and economic characteristics of the governorate have meant that, in many ways, it has benefitted from a wider range of the elements of the IRD programme than some of the other governorates, thus making it, in terms of assessing the overall national programme, a highly suitable case study.

With attention thus focussed on Monastir governorate, Chapter Five presents an evaluation of the resources available within the governorate of relevance to rural development. As has been made clear elsewhere (ITC/UNESCO 1975, Livingstone 1979), such a resource evaluation is vital to the success of any rural development programme. In the context of this thesis, where the overall objective is to assess a programme currently being implemented, the necessity for such a Chapter lies in the need to understand the background factors against

which the rural development programme is being implemented. The Chapter also serves to highlight some of the rural problems specific to the study area.

Chapters Six to Eight present the results of the detailed analysis of the Tunisian rural development programme in Monastir governorate. Chapter Six examines the power and responsibilities of the governorate rural development office. It studies the budgeting tools at its disposal and the projects undertaken with the financial resources available. Using the five components identified in Chapter Two as being the key constituents of an IRD programme, the rural development programme in Monastir is compared to that proposed in the ideal model. Attention is also given to the practicalities of integrating the various agencies responsible for specific aspects of the development programme.

Turning to the other extreme, Chapter Seven assesses the impact of the rural development programme as viewed by the residents of five villages within the governorate. Attention is given to the social, economic and infrastructural developments within the villages and to the reaction of the residents to these developments. Consideration is also given to the extent to which the urban and rural economies are related, in an attempt to investigate the viability and potential of IRD in terms of integrating the two sectors.

Although rural development must tackle a whole range of aspects, ranging from housing to health and to rural economic activities, undoubtedly the key element must be agriculture as this forms the basis of any rural society. In recognition of the importance of agriculture to rural development, Chapter Eight focuses on; i) the impact that the government-sponsored rural development programme has had on agriculture in the area, and; ii) an internationally sponsored programme to

develop a number of irrigated areas throughout the Sahel. Again, reference is made to the opinions of local residents in both these instances.

Finally, in conclusion, the elements of the Tunisian IRD programme are drawn together and assessed in order to establish the overall success of the programme. Any particular weaknesses and strengths are highlighted, thus pointing the way for others who may wish to assess the viability of an IRD programme in another situation.

To summarise, the purposes of this thesis are as follows:

i) in the light of the wide-ranging debate on rural development in the Third World, to formulate a specific model for the development of the rural sector of a developing nation. This model is based on an integrated rural development programme which, it is suggested, provides one of the more realistic and potentially successful programmes for rural development.

ii) to assess the viability of the Tunisian rural development programme, in light of the IRD model, with specific reference to the governorate of Monastir. Parallels will be drawn between the model and the Tunisian reality in order to assess the strengths and weaknesses of the Tunisian programme.

iii) to present a detailed analysis of the national rural problem in Tunisia.

iV) to examine, at the micro-scale, the impact of the Tunisian rural development policies.

CHAPTER TWO

INTEGRATED RURAL DEVELOPMENT

2.1 Introduction

That there is a need for coherent rural development strategies in the developing world is patently clear. Many attempts have been made to tackle the problems of the rural sectors, yet poverty, inequality and low productivity persist. One particular strategy that does hold some promise of potential success is that of Integrated Rural Development (IRD). It is a label that has been applied to a wide variety of schemes and projects and, in the extensive literature relating to the topic, there appears to be considerable confusion over a precise definition of the term. Nevertheless, the basic precepts of IRD provide development planners with a foundation that has considerable potential for the successful development of rural areas in the Third World.

In this chapter a model for IRD is precisely defined. The origins of the strategy are first reviewed before an analysis of the idealogical framework which is the basis of the strategy is presented. After describing the objectives of IRD, the various components of the approach and their inter-relationships are analysed. This is followed by a discussion of how IRD can be implemented and some of the problems that are encountered.

2.2 Origins of IRD

The recognition of the complex nature of the rural problem was one of the main stimulants to the development of IRD. The rural development system has been described as being "complex, multi-disciplinary, highly interacting and stochastic in nature" (Belshaw et al. 1975, p.401). Similarly,

Cornelis suggests that rural development is three-dimensional in that it represents an objective, a method and a process (Cornelis 1976 p.27). In the light of such an awareness of the nature of the rural development problem, an approach to it is required that has the ability to cope with its complexity, to organise the necessary inter-disciplinary work, to co-ordinate and monitor the various interactions and to be able to put it all into a logical temporal and spatial framework. Such is the objective of IRD.

Secondly, part of the origins of IRD lie in the achievements of past development strategies (ODI 1979). Many strategies, such as those aligned to the growth/industrialisation paradigm of the 1960s, or those associated with the Green Revolution have been almost complete failures in achieving widespread development of the rural sector. Consequently, a search has had to be made for alternative development strategies. In some cases, particularly in the early 1970s, approaches have been made to tackle the rural problem specifically, some of which have met with some degree of success in the area or sector of application. The problem with such schemes has often been one of replicability. This was certainly the case with the Comilla project in Bangladesh (Khan, A. H. 1974, Khan, A. R. 1979), and applies to a certain extent to the Ujamaa village project in Tanzania. Accordingly, methods have been modified in an attempt to make them more adaptable. In addition, there are those projects or programmes that have met with success in as far as they have gone. In particular, reference can be made to the community development programmes of the 1950s and 60s which were a feature of rural development in India and Pakistan, such as Pilot Project India (Mayer, et al 1959). It has been argued that IRD as a strategy can be traced almost directly to

these programmes (Ruttan 1975). But, although community development programmes met with considerable success in the areas of welfare and social environment, they failed to establish the economic base so essential for their self-perpetuation.

Finally, it can be argued that it is only recently that political conditions in many of the developing countries have stabilised sufficiently to enable the implementation of IRD programmes. Particularly in Africa and parts of Asia, countries are only just reaching a stage in their evolution sufficiently detached from the traumas of independence that has allowed the establishment of a stable and widespread administration. A comprehensive territorial administrative structure is vital to the success of IRD and so it is only within the past few years that such programmes could even be considered.

2.3 Ideology

Throughout the widespread and voluminous literature on IRD there is considerable variation as to exactly what is meant by the term. The variety of definitions has led some writers to be sceptical of IRD as an approach to rural development (Ruttan 1975, Belshaw 1977). It is in order to avoid such scepticism that this chapter seeks clearly to define integrated rural development. Many of the discrepancies in the definition of IRD are not so much over the elements of the approach, but more in the ideology, or framework within which they are placed. It is therefore essential to discuss the varying ideologies and to identify those which would seem to be the most valid before proceeding to analyse the more specific aspects of IRD.

In all, four main groups of ideology can be differentiated: the sectoral integration approach, the spatial

integration approach, the project/area approach, sometimes referred to as comprehensive development, and the integrated planning approach. Of these, the first two are least significant.

2.3.1 Sectoral Integration

Sectoral integration has two sub-branches. On the one hand is that which is similar to the approach adopted in a project sponsored by the FAO as early as 1959 (FAO 1959), but which is still found in more recent works (Brahme 1977), whereby IRD is seen simply as either the integration of different activities within the rural sector to each other (for example, agricultural activities with other land-based activities, and further integration of these with secondary and tertiary activities), or the integration of agricultural activities with overall economic growth. The prime objective of this form of integration is to bring about higher returns from a given investment and to ensure better integration between the local resource base, the productive activities and the infrastructural facilities (Brahme 1977, p.37); its rationale is that it should work to the advantage of the weaker sections of the rural population who have been by-passed in the development process. Such reasoning is true in that this type of sectoral integration would establish a sound economic base in a rural economy, but its weaknesses are two-fold. Firstly, economic sectoral integration tends to give little consideration to the social/welfare aspect of development. Secondly, the approach can only effectively relate to specific spatial areas. As no associated institutional organisation is considered, there would be problems of replicability and extension to the national

scale.

The other sub-branch of sectoral integration is based on the view that the ultimate cause of rural poverty is the lack of integration of the rural sector into the overall economic and political system. Thus, to surmount the problem of rural poverty, it is necessary to bring about such integration (Kotter 1974, Sinha & Kotter 1977). This attitude to IRD has also been adopted by the FAO who now see IRD as "the integration of deprived rural groups into the monetised rural economy and the narrowing of disparities between the rural and urban sectors" (ODI 1979 p.2). The World Bank takes a similar view of IRD (Yudelman 1976, 1977). In one sense however, the concept of integrating the rural poor into the overall economic, social and political system is no less than the objective of rural development per se. The term 'integrated' in this sense therefore becomes redundant. This is not to say that this aspect of rural development is not, or should not be a part of IRD. Indeed, the concept of IRD has been criticised on this very point; Ruttan claims that insufficient emphasis is put on the need for rural development to complement urban-industrial development (Ruttan 1975). As will be further elaborated below, IRD must be seen not only as a means, but also as an end. An IRD approach where integration is seen solely as an end can be rejected as a viable rural development strategy.

2.3.2 Spatial Integration

Sectoral integration cannot therefore be accepted as a definitive ideology for IRD. The objective of integrating rural sectors should be a part of an overall rural development strategy, but it is inadequate in itself. This also applies to the ideology of spatial interaction. The main proponents

of this approach are Rondinelli and Ruddle who suggest that it is an

> ".....unarticulated spatial structure that is the fundamental obstacle to equitable distribution of growth in developing countries, and that for a country to develop it must integrate its urban and rural functions".
>
> (Rondinelli and Ruddle 1976, Ch. 8)

This differs from the above sectoral approach in that the emphasis is put on the spatial system of the developing country with much of the basic hypothesis being built on the spatial pattern of development (Rondinelli and Ruddle 1978). The foundation of the strategy is a hierarchy of cities and towns functionally linked, with agricultural production areas providing a decentralized network of development centres that can increase the access of large segments of the population to economic, social and political opportunities, as well as to urban services and facilities. Urban functions and services can thus complement the wide range of technical inputs required to commercialise agriculture and increase rural productivity. A specific example of the application of an integrated spatial development ideology can be seen in India, where a pilot research project established a number of small rural growth centres (Shah 1974). This project envisaged the preparation of integrated area development plans for all-round development of selected centres. The accent was on rural - urban integration - an aspect ignored in early community development plans from which this project has evolved. The justification for the project was that since the integration of the lower order settlements with the higher order settlements is an appropriate exercise for the integration of activities in any region, the inclusion of urban centres with the rural would lead to the development of an integrated rural community. Such an approach to development, focused on small-scale rural

growth centres, is expounded elsewhere (Lo and Salih 1978). These writers, whilst accepting that the original growth pole concept, as propounded by Perroux and further developed by Myrdal (1957, 1963) Hirschman (1958) and Friedmann (1966), has not met with the success that was originally anticipated, suggest that small-scale rural growth poles may have something positive to offer to the rural development process.

Like sectoral integration, spatial integration as an ideology for IRD is valid only in so far as it goes; it does have serious shortcomings. In particular, an approach to rural development based solely on spatial (re-) organisation tends to neglect the development functions within the rural sector in its concentration on the relationships between sectors. Also, spatial integration does not cater for the creation of an institutional and organisational framework to implement development. Again, spatial integration, like sectoral integration, does have a role to play in IRD, but it must complement other activities. This role will be elaborated and placed in its proper perspective below.

2.3.3 Project/Area Approach

The third ideological framework which has been labelled IRD is based on a project or area approach. Given the recognition of the complex interacting nature of the rural problem, it has been very appealing to both governments and donor agencies to take an area, or to design a project framework (often area-based), and attempt to 'do everything' within it. Such an attitude has often implied the implementation of a number of package inputs to an area, each dealing with aspects such as agriculture, health, education and infrastructure, but with the objective of providing an integrated whole. In purely theoretical terms, an example of the package input approach to

project/area ruraldevelopment has been developed by James Yen (cited by Oshima and Rikken 1975). Yen's micro IRD approach is based on four packages of inputs relating to: rural livelihood, education, health and sanitation and self-government, with a territorial focus on a fixed number of villages. Single authorities are frequently created to be responsible for the project or area development with resources - supposedly - adequate to implement a comprehensive, multi-sectoral programme in its area of jurisdiction.

With reference to practical experiences of such an approach, three different types of area projects labelled as IRD programmes have been identified (ODI 1979). Firstly, there are those projects in zones of high agricultural potential, where inputs and services are concentrated and special project authorities are established (the Gezira scheme, for example). Secondly, there are those projects aimed at developing previously neglected marginal areas, such as the projects undertaken in southern Africa (Thomas and Boyazoghu 1978) and Swaziland (Nsibandze 1977). Finally, those projects involving settlement in new or under-utilized land, normally accompanied by major resource development; settlement expansion undertaken by the Israeli s in the 1950s and 60s is a classic example of such an approach (Weitz 1965).

The project/area approach to IRD is by no means totally unsuccessful. There are many instances where the approach has stimulated a rise in general incomes, living standards and productivity within the target area. Despite its difficulties, such advances have been noted on the Gezira project in the Sudan, for example. However, there are a number of criticisms that can be directed at the strategy. In one sense it can be argued that the project/area approach does not warrant the

term 'integrated'. In reality, it is more a case of comprehensive, multi-sectoral development in that, firstly, it does not always seek to integrate the development of each of the separate factors within each project or area; nor, secondly, does it seek to integrate the development of one area with that in another (Livingstone 1979). Any success encountered by such IRD programmes is very often due to the intensity of resources - human, financial, technical and managerial, which are applied to the project or area. Such intensity often cannot be sustained for long periods, nor can it be sustained when attempts are made to spread projects over larger, even national areas. Indeed, the characteristics of individual projects are often insufficiently flexible to enable them to be replicated elsewhere. Also, the resource intensity that often accompanies the implementation of these projects can only be achieved at the expense of the neglect of other areas.

A further problem associated with this approach to rural development is that the initial identification of an area and of the objectives of a project are very difficult to carry out. Even if successfully completed, comprehensive, multi-sectoral development is fraught with design problems (Yudelman 1976). Implementation is also difficult, especially given the frequent shortages of trained and experienced management in developing countries; indeed, the management problem has been seen as the potential achilles heel in the whole concept of IRD (Shaner and Fischer 1975). In addition, there is the problem of planning the sequencing of the inputs and interactions, both in time and in space, which thus makes the whole approach complex and difficult to organise. This, however, is a problem common to any development planning. In concluding the problems of the project/area approach to IRD, the ODI can be cited in

their fears that

> ".....as a project approach, IRD may not only represent a costly misallocation of resources, but it may also be responsible for adding to those problems of managing and organising agricultural development which it set out to solve."
>
> (ODI 1979, p.3)

Such problems do not necessitate the complete dismissal of the project/area approach to IRD. Before integrated planning (demonstrated below to be the optimal IRD ideology) can be established on a national scale, much useful information and experience can be gained through the use of properly organised pilot IRD projects. Such a procedure is implied by Shaner and Fischer, who suggest that a number of pilot projects be undertaken whilst building the necessary administrative and planning framework for the eventual national integration of the overall development strategy (Shaner and Fischer 1975, Fischer 1975). This method was utilised in Swaziland (Nsibandze 1977), but it does have its dangers. When attempts were made to extend the Comilla project to other parts of Bangladesh, it was realised that resources were insufficient to replicate the Comilla model throughout the country. Consequently, the original model was not fully extended and the resultant success rate was below that experienced at Comilla (Khan, A.H. 1974, Khan, A.R. 1979).

2.3.4 Integrated Planning

The final, and in the author's view, most logical and suitable IRD ideology has been influenced by the mass of work on regional planning carried out both in the developed and developing worlds. If a label is required, then the term 'integrated planning' can be applied to this particular ideology. Essentially, it involves the creation of a national rural development planning

system, the underlying rationale being based on four factors. Firstly, rural development in a country needs to be considered as a whole, not dealt with in piecemeal fashion, be it sectoral, spatial or project based. Agricultural development in one area, for example, cannot be considered in isolation from market factors in another area. The development of the agricultural sector requires balanced planning throughout a nation so that changes in different areas, as well as benefitting the area of change, can also complement development in other regions. This applies to development in all sectors, not just agriculture.

Secondly, rural development cannot be considered in isolation from the rest of a country's economy. By creating a national integrated planning machinery, rural development can be planned in conjunction with urban-industrial development, with population change and with consideration of external influences such as foreign trade and international aid.

The third factor is the need to involve the rural population in the development process. Superimposed development is almost certainly doomed to failure from its conception. Development must be based on the needs and aspirations of the target population, and the development process itself must involve those whom it affects. An integrated planning framework should be constructed so as to enable such participation.

Finally, reference has been made to the complex and interacting nature of rural development. Many elements are involved in the development of the rural sector and, to successfully co-ordinate action in all the necessary fields, the creation of a single, co-ordinating framework is essential.

It must also be emphasised that IRD within this ideology is not only a means, in that the tools for an integrated development programme are provided, but it is also an end, in

that it seeks to integrate the rural sections of the population with the remainder of the national community.

The ideology for IRD proposed here is based on a closely integrated planning cadre which functions at three main levels. In the first instance there is the national planning process. Only at the national level can a rational over-view be taken within which overall policy guidelines and objectives can be formulated. These, however, are intended to function as a flexible framework. The crucial level of operation is the region, for which ten basic functions in integrated development have been identified:

i) to create, analyse and project subnational information (this is fed to the national level for overall policy formulation as well as used as a basis for regional activities);

ii) to contribute toward a better spatial distribution of national investments;

iii) to relate specific projects, through a regional sub-aggregation, to national targets;

iv) to co-ordinate sectoral investment at the regional level;

v) to incorporate additional natural, human and financial resources into the development process;

vi) to organise and rationalise local and regional political pressures to contribute to the national decision-making process;

vii) to contribute toward keeping aspirations in line with available resources at the sub-national and consequently at the national level;

viii) to inter-relate economic, social and political development which requires the more immediate interactions at sub-national levels;

ix) to introduce criteria into efforts for obtaining a measure of regional autonomy;

x) to combine the flexibility of spatial units required by the development process with the steadiness required by socio-cultural regionalism and the rigidity of a continuing information system.

(Stöhr 1969, p.85)

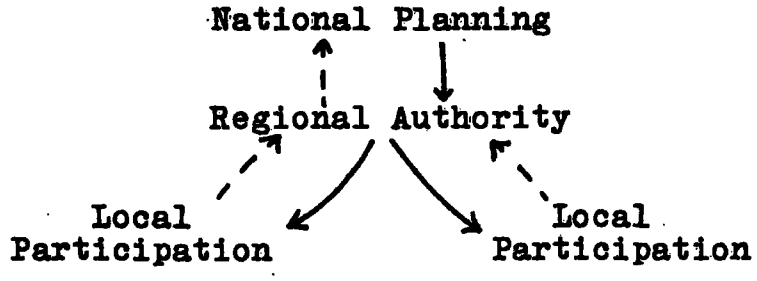
Although Stöhr is discussing the functions of a region in the context of overall development, the above list holds true as much for rural development, particularly when it is considered that most regions of developing countries are predominantly rural.

To carry out such functions in the sphere of IRD it is necessary to create a rural development authority within each region. This authority should be responsible to the national economic planning ministry. The creation of such an authority is also linked to the demands made for greater decentralisation of decision-making in developing countries (Lele 1977, Weitz 1979). The authority should operate as a 'cross-function', having vertical ties with national government and horizontal links with the region (Weitz 1965).

Although the region is the keystone to this particular IRD ideology, the local level within the region also plays a significant role. At the local level, attempts are made to articulate and mobilise the local population. Through organisations such as farmers' associations, women's groups and trade groups, this IRD strategy seeks the views of the local population on the development process and enlists their support for the implementation of programmes.

The whole three-tiered structure is based on two-way flows (fig. 2.1).

Fig. 2.1 Structure of an Integrated Planning IRD Ideology



Although overall policy is formulated at the national level, its formulation is a response to the needs and aspirations fed to the national level from the local areas, via the regions. Once formulated, policy is passed down to the regional level where it is adapted to fit conditions in that area. All flows continue during programme implementation, thus enabling constant evaluation and modifications to be made to meet changing circumstances.

The advantages of this ideology are thus three-fold. The approach to the multi-faceted problem of rural development can be co-ordinated by a single authority. Although it may not necessarily be directly responsible for project implementation (this will usually be left to specialist agencies), it is in a central position which enables it to take a constant overview of the whole process.

Secondly, all interested parties can theoretically be involved and integrated through this process. This ensures that development and change are brought about from within rather than imposed from outside.

Finally, with the feedback systems inherent in the organisation structure, programme implementation can be flexible and adapt to unforseen changes. The flexibility also ensures that regional programmes can be specifically adapted to meet local needs.

That the ideology provides a viable structure to approach the rural problem of developing countries is demonstrated in succeeding chapters, with specific reference to Tunisia. Other successful examples can however be seen in Taiwan (Hseih 1971), the Philippines (Oshima and Rikken 1975) and Israel (Weitz 1979). Despite its successes however, the approach inevitably experiences a certain number of problems. Although governments have regarded this strategy as a means

of improving the management of rural development by delegating functions to regional authorities, often this delegation is not supported by the provision of adequate management personnel or budgetary resources. Even if the delegation of authority is given sufficient resource support, there is a danger that an excessive bureaucracy may be created, causing a decrease in the operational efficiency of the whole organisation.

Some criticism has been levelled at this mode of IRD for its concentration on the region as the principal functional unit (Belshaw 1977). This is based primarily on the belief that it is difficult to delimit a region. However, given that development planning must work at lower levels than that of the nation (to operate rural development at this scale would obviously be impractical), the view held here is that the regional divisions of the territorial administration provide a convenient and adequate delimitation of areas for integrated rural development.

Although essential to successful IRD, the mobilisation and organised articulation of the local population is a difficult task. Also, participation and peasant involvement are very emotive subjects. To many governments, the thought of a coherent and organised peasantry is a frightening one (Higgs 1977).

One danger associated with the development of a comprehensive rural development planning hierarchy is that, as sufficient resources are made available for an effective programme, there is a temptation for the regional authorities to forge ahead and try and do too much, too quickly. Such an event would obviously be to the detriment of the overall programme. A carefully considered and planned sequential (in time and space) approach is thus essential to the success of such an IRD strategy (Lele 1975).

Despite these problems, none of which are insurmountable, it is the integrated planning ideology which provides the most realistic and viable strategy for IRD. It is a strategy which focuses on IRD both as a means - in that rural development planning is integrated through a three-level planning hierarchy - and an end-in that it seeks to integrate the rural sector, both internally (linking agricultural and rural industrial activities, for example) and externally (establishing closer ties between the rural and urban sectors).

2.4 Objectives

IRD is directed primarily at the rural poor, particularly small farmers, tenants, landless labourers, women and young people who are being by-passed by the development process. In order to reach such people IRD must make a broader attack on rural development; it needs to seek to bring about structural changes in the rural economy which will ultimately lead to the improvement of the social well-being of the rural population (Khalih 1977, Khan, A.A. 1977). In general terms IRD thus aims at increasing agricultural production, improving the distribution of income and achieving progress in social change. IRD must, however, be viewed as a long-term strategy, the more specific objectives of which can be defined as:

i) more equal access to, and better utilisation of resources and services, and greater access to employment opportunities for people in order to contribute to, and benefit from the development process;

ii) a higher rate of growth in agricultural production, with special emphasis on increasing yields of subsistence farmers. The conservation of natural resources and the avoidance of environmental degradation must be observed;

iii) better and more equitable income distribution, including the non-material benefits of production, and improved social security;

iv) improved consumption patterns, particularly

with regard to food and nutrition of the vulnerable groups;

v) increased mobilisation and motivation of rural people to achieve wider participation in decision making to influence the development process, particularly at the local level.

(Leupolt 1975, pp. 36-37)

To these can be added the broader objectives discussed in the previous section of:

vi) the integration of various sectors of economic activity;

vii) the spatial integration of the rural and urban sectors.

The specific method and sequencing of the implementation of these objectives is bound to vary from country to country; there can be no blueprint approach. Nevertheless, whatever the specific approach to IRD, the objectives outlined above imply a number of components that would be common to any IRD programme. These components form the heart of the development programme and are discussed in full below.

2.5 Economic Component

Agricultural development is the key to rural development. It cannot, however, be considered in isolation; but must be planned in conjunction with concom itant developments in the secondary and tertiary sectors. It is the intention of this section to discuss the meaning of agricultural development, to analyse its importance to rural development and to examine the necessity for secondary sector developments to complement it and the form such developments should take. (Tertiary sector developments are discussed in sections 2.6 and 2.7). Finally, details on how such developments may be implemented within the framework of IRD are presented.

2.5.1 Agriculture

In its simplest terms, agricultural development implies increases in agricultural production (actual total output) and increases in agricultural productivity (output per capita). Certainly this must be the first stage, but agricultural development must be seen as something more; it also implies structural transformation from (at one extreme) subsistence farming, through diversified or mixed farming to (at the other extreme) specialised farming (Weitz 1971, pp. 17-19). This transformation may or may not include changes in ownership and management structures of individual farms. Although agricultural development should entail a movement along this spectrum, specialised farming can only be seen as a long-term objective; the aim of rural development programmes should be more modest.

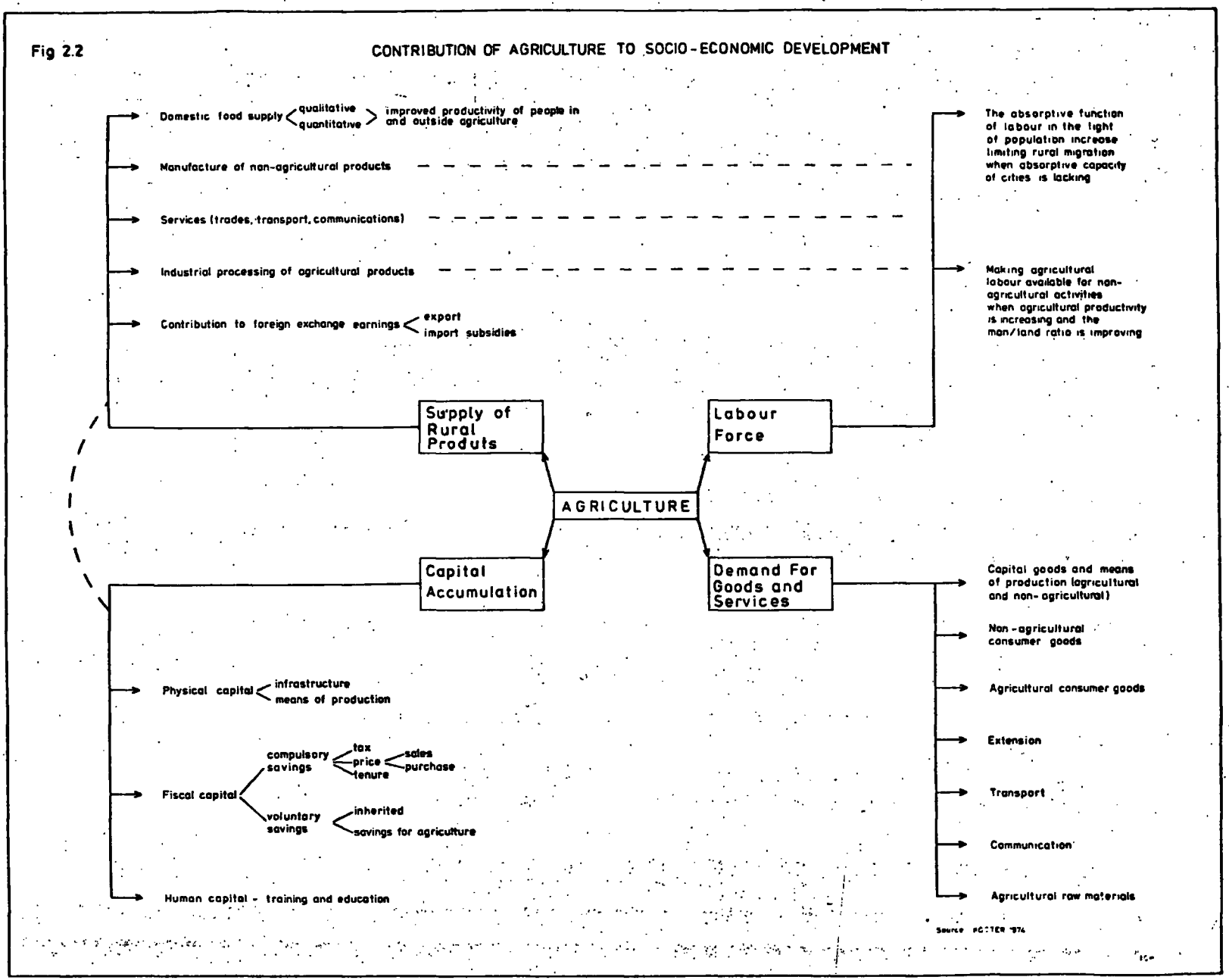
Agricultural development is important for two reasons. Firstly, it must be remembered that approximately 80% of the population of the developing world dwell in rural areas, and that the majority of these depend on agriculture for their livelihood. As much of the poverty and hardship of the Third World is also concentrated within the rural sector, it can therefore be agreed that if significant improvements are made in agriculture, then improvements will follow in the living conditions of this population.

Secondly, development of agriculture is important because of the effects it has on other sectors of the rural socio-economic environment. These effects can be divided into four areas as illustrated in figure 2.2 (Kotter 1974).

With subsistence farming, agricultural goods are produced almost entirely for consumption by the producer. With development and a shift along the agricultural production system spectrum, an increase can be expected in the supply of

Fig 2.2

CONTRIBUTION OF AGRICULTURE TO SOCIO-ECONOMIC DEVELOPMENT



agricultural goods surplus to the producers' requirements. This leads directly to an increase in the domestic food supply, both in qualitative and quantitative terms. Not only does this provide help towards nutritional and health problems, but it also encourages increased productivity of people in and outside of agriculture. Less directly, an increase in the supply of rural goods will stimulate industries to process agricultural products, which in turn will create a demand for capital goods for that processing. An increase in the amount of rural goods on the market will also have an effect on external trade; export potential (and therefore foreign exchange earnings) will increase and opportunities will develop for import substitution. Finally, an increase in the supply of rural goods will stimulate the tertiary sector. For example, demand will be generated for improved transport and communication links.

The second area affected by agricultural development would be the labour force. Initial development, with attendant increases in production and productivity, would lead to increased demands for labour. Taking account of the growing populations of developing rural sectors, this increased labour demand is unlikely to do more than hold rural unemployment constant. Also, rising demands for agricultural labour cannot continue indefinitely and a peak demand would soon be reached. However, secondary sector developments stimulated by agricultural development will also help absorb the large pool of rural unemployed. Improved employment opportunities will help reduce rural - urban migration, thus easing the pressure of urban unemployment.

One of the basic tenets underlying the growth/ industrialisation paradigm of the 1960s was that capital

accumulation resulting from increased industrialisation would be a major catalyst for development. Although the emphasis on this line of thought has declined, capital accumulation is still important to development. Agricultural development will both directly and indirectly stimulate the accumulation of physical, fiscal and human capital. With regard to human capital formulation and accumulation, agricultural development creates a demand for trained personnel both to initiate development through, for example, new techniques, and to sustain that development once set in motion. Augmented incomes from both the increased agricultural and non-agricultural production enables fiscal capital accumulation through both compulsory savings (such as taxation) and voluntary savings. Finally, the general expansion of activity associated with agricultural development requires concom itant development of the physical infrastructure, including roads, bridges, public buildings and irrigation schemes. Such physical capital accumulation, in addition to that associated with means of production, is also generated by the expansion of the secondary and tertiary sectors which, in turn, have been stimulated by agricultural development.

One of the more important contributions of the development of the agricultural sector to the overall development of the economy is the consequent increase in demand for goods and service. In the first place, the expansion of agriculture itself will lead to an increase in the demand for capital goods. This in turn will encourage the expansion of secondary activity related to the production of agricultural capital goods which, in its turn, will stimulate a demand for other manufactured goods, and so on. Secondly, the increase in family income which is one of the objectives of agricultural development will mean an increase in demand

for both agricultural and non-agricultural consumer goods.

Although labour force, supply of rural goods, capital accumulation and the demand for goods and services have all been separately discussed, it is clear that each is closely inter-related with the other. For example, a rise in demand for non-agricultural consumer goods will stimulate the development of manufacturing industry. Similarly, the growth of manufacturing industry will in turn require physical capital developments and will also encourage the accumulation of fiscal capital. In the light of such interactions, the importance of agricultural development as a catalyst for major changes throughout the rural and non-rural economy is clear.

2.5.2 Secondary Sector Development

The phenomena resulting from agricultural development discussed above will, in a free market economy and given sufficient time, occur on their own. However, planned intervention by national or regional authorities in the secondary and tertiary sectors, at the same time as work on agricultural development, will hasten the process. Secondary sector development must be considered in terms of the creation of small industry, ranging from cottage industries to concerns employing between 40 and 50 people. Infrastructural support for larger concerns would be difficult in remoter rural areas. Any such industrial development must be based on local resources and on 'appropriate' technology (Schumacher 1973). Three types of industry suitable for rural industrial development have been identified:

i) processing of agricultural products;

ii) 'co-ordinated' industry - industry that fits into the work schedule of farms so that farmers and their families can be employed in them in addition to farm work (e.g. craft trades);

iii) 'neutral' industries - those with no direct connection with local agriculture but whose main purpose is to absorb surplus manpower. (Weitz 1979).

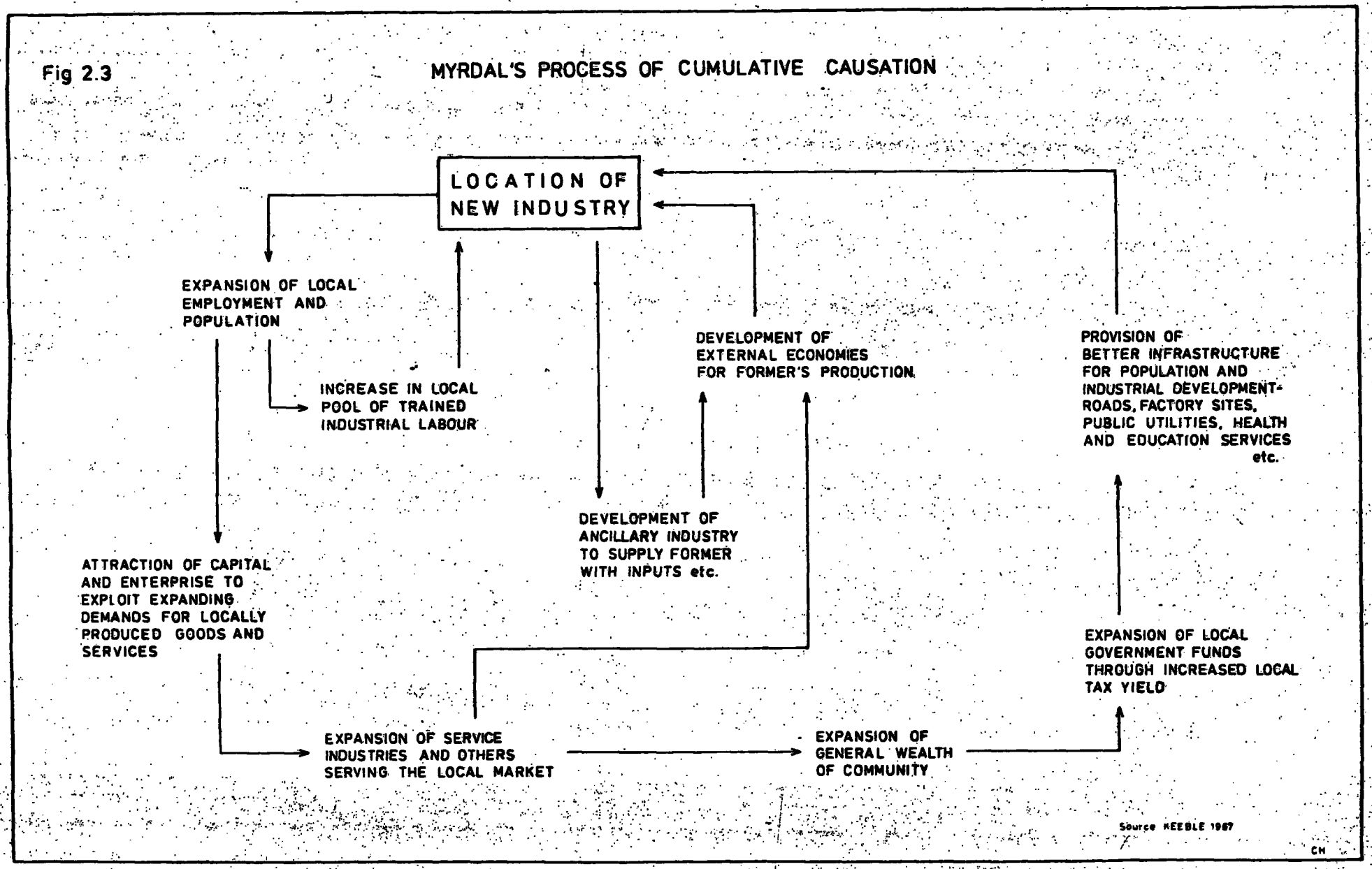
The reasons for encouraging rural industrialisation were partly outlined in the discussion of the contribution of agriculture to socio-economic development, where it was demonstrated how the development of manufacturing industry has beneficial effects on demand, labour and capital accumulation. But in order to be more explicit, adaptation can be made of Myrdal's model of cummulative causation (Myrdal 1957, 1963). Myrdal used his model to illustrate how, in a free economy,

> 'particular economic changes and the play of forces in the market would tend to increase inequalities between regions'.
>
> (Myrdal 1963, p.13)

The main concern of his arguments related to urban (industrial) development and history has shown him to be correct . However, if close examination is made of the arguments Myrdal used to support his case, the reasoning can be taken and applied to an argument <u>for</u> rural industrialisation.. A diagrammatic representation of Myrdal's model of cummulative causation is presented in figure 2.3. By changing the initial viewpoint and assuming that the location of new industry is made in a rural area, the diagram illustrates how benefits may accrue to that area. Instead of being an argument against the concentration of investment in urban - industrial areas, it becomes an argument in support of rural industrialisation. Naturally, most of the relationships portrayed in the diagram would be on a small scale in rural areas, but this does not detract from their value. Implicit in the model is a focus for new industry on specific points in space. This relates well to the argument propounded below (section 2.9), where it is suggested that within the spatial component of an IRD programme there is a need for small-

Fig 2.3

MYRDAL'S PROCESS OF CUMULATIVE CAUSATION



scale rural growth centres which could provide a focus for rural industrial development. Very small-scale industrial activity (such as cottage industries) will continue to be dispersed throughout the rural sector.

2.5.3 Implementation

Bearing in mind that one of the overall objectives of rural development is a broad structural transformation of the rural sector, five sets of actions needed to bring this about can be identified. Several writers have argued the need to work from the small family farm as the basic unit for agricultural development (e.g. Lele 1975, Weitz 1971). The main argument in support of this point is based on tenets of social equity. However, the land ownership structure of many rural areas in the developing world is not based on small family farm units. Thus the first action in the process of agricultural development may be a programme of land reform. It can be argued that, even with inequalities in the distribution of land rights, increasing agricultural production through the assistance of middle and large farms can lead to substantial benefits for the landless and small and marginal farmers, as it increases the marketed surplus of food and provides opportunities for increased employment. But indirect benefits to the poor tend to be very limited. However, land distribution also affects the political and administrative structures and, through these, policies and institutions (Lele 1977). Also, in the absence of equitable distribution of land rights, the advent of new technologies is frequently followed by the eviction of small tenants and replacement of farm labour by mechanisation. The insecurity of tenure and the high and uncontrollable rents that accompany inequality in land distribution substantially reduce the profitability of innovations to tenants in comparison with land owners. The

low-income tenants and marginal farmers also have ability to undertake the risks of failure involved in adopting innovations. Therefore, redistribution of land rights is frequently essential for improving the overall socio-economic, political and administrative environment.

Once the basic structure of family farm units has been established, there is a need to seek diversification of the regional agricultural economy. One of the most effective ways of achieving this is the construction, by development agencies, of farm type models (Weitz 1979). With the design of these and their implementation on a number of pilot farms within a region, a pattern of diversified agriculture can be gradually introduced. Three points need to be born in mind in relation to these models: firstly, they must help to increase the access of people to natural resources; secondly, the type models must be closely related to available local resources; and thirdly, appropriate, intermediate technology must be utilized.

A third set of actions required for the implementation of a broad structural transformation is the creation of a new or improved network of services. Such services would be established in order to:

a) provide inputs necessary to both agricultural and industrial development, such as credit supply, extension services and research facilities; b) improve the transport and communications network; and c) deal with increased outputs resulting from agricultural and industrial developments including, in particular, an effective marketing system and a pricing policy.

In order to ensure that rural development is carried out with the participation of the people, and is not an imposed process, and to thus ensure a greater degree of

co-operation from the peasantry, organisations must be created by and for the people in order for them to articulate their needs, their reactions to proposals and their 'in-house' evaluation of progress.

The final major action programme that is required relates directly to the promotion of rural industrialisation. The programmes should include the provision of supporting physical infrastructure, physical planning to create suitable locations for rural industry and facilities for loans and grants to help initiate investment in industrial sectors which conform to regional plans.

2.6 Social Component

Rural development entails more than just economic development. Given that the over-riding objective of development must be the 'development of man' (Haque et al 1977), a social or welfare component must be an essential part of an IRD programme. Such a component should include an education programme, a health and nutrition programme (including a family planning element), community development, manpower development, a housing programme and the provision of basic amenities.

2.6.1 Education and Training

Literacy levels in many developing countries are low. This is a prime indicator of the inadequate provision of education facilities, particularly in rural areas. Apart from the basic human rights point of view, teaching people to have at least the fundamentals of reading and writing and a basic awareness of the world within which they live, is not only an important part of an IRD programme in its own right, but is also important in that it aids the development process itself. Diffusion of ideas, for example, is quicker and easier with a literate population. An awareness of wider perspectives

also helps ease the mistrust often encountered amongst rural society with the introduction of change. It must be accepted, however, that education programmes may have to be initially restricted to the provision of universal primary education. Although resources may be inadequate to provide comprehensive secondary education, facilities for this level must nevertheless be provided, if only in a limited form and at the regional, not local, level.

An education programme also implies the inclusion of teacher-training facilities and the provision of adequate physical infrastructure and materials. This includes school buildings, books and other teaching materials.

A second essential component of an education programme is manpower development. This entails the training of people in certain skills such as agricultural mechanics, craft goods manufacture and specific aspects of agriculture, such as irrigated farming. Naturally, particular skills training offered within a region should reflect the needs of that region. Training centres should be dispersed, not concentrated on one town; and no restrictions should be imposed on people wishing to have access to training facilities in regions away from their home area. Such centres should cater primarily for young men and women, 16 to 25 years old, with additional limited facilities for older sections of the community. The provision of limited grants by the regional authority would encourage people to attend skill centres, thus making them potentially more marketable on the job market. Although formal school education would be under the authority of a national education ministry, skill centres would need to be organised by other relevant ministries, such as that of Agriculture, in conjunction with regional and development authorities who are in the best position to assess the needs of

an area.

2.6.2 Health and Family Planning Programmes

The provision of health care is a vital part of the social/welfare component. The prime objective within an IRD programme should be the provision of a network of easily accessible primary health-care centres. In the light of the likely high dispersal rates of such centres, permanent staffing with fully qualified doctors is an unrealistic expectation. However, weekly visits by a doctor, complementing full-time staffing by a qualified nurse, would present the best use of limited resources. Major capital expenditure for health care, such as on hospitals, will inevitably be restricted to major towns. The amount of control over health services invested in the regional rural development authority will be restricted solely to decisions on location and the provision of supporting infrastructure. The national health authority must take responsibility for finance and upkeep of rural health centres. It must be noted, however, that health service provision is one phenomenon that has seen rapid progress in rural areas of the developing world. There are two reasons for this: health-care provision is a favourite objective of international donor agencies, it represents something that bears direct, visible results, it helps ease the conscience of the rich' and it represents something of which developed countries can easily produce a surplus and can be easily transported to developing areas. Secondly, the need for health-care has always been obvious to the governments of developing nations and its provision has long been seen as a major development objective. Health-care provision also represents tangible evidence of progress that can be presented to the rural peasant to help convince him that his government really is attempting to tackle problems in his sector.

Associated with health services must be a family planning programme. Population growth rates of 2.5% and above are common throughout the developing world, and such rates are frequently even higher in rural areas. Substantial increases in population put increased pressure on already scarce resources; a family planning programme is thus essential. Ideally, family planning services can be based on the infrastructure created for health-care, although it is important to emphasise the need for widespread education and information campaigns, as well as the more medical aspects of any such programme.

The nutritional problem encountered in many rural areas will be partly eased as a result of diversified agricultural production which will lead to improved diets. Nevertheless, there is scope, under the health element of IRD, for the provision of nutrition experts at the national level who will be available to regional authorities for advice on dietary requirements.

2.6.3 Housing and Basic Amenities

Although difficult and often expensive, the provision of basic utilities, in particular potable water, to all rural areas must be placed high on the list of priorities of an IRD programme. With regard to water distribution, the objective must be to provide good quality water if not to individual houses, then at least to public stand-pipes which are easily accessible to all sections of the population. Drainage and power supplies are not of the same immediate importance as water, but nevertheless their provision must be included in long-term objectives.

Rural housing is another problem that should be faced within the context of an IRD programme. One of the functions of a rural development authority should be to ensure the

provision of shelter of at least a minimum acceptable standard to the whole rural population. The construction of low-cost housing by the rural development authority, which can be sold or rented at favourable terms to the more needy elements of the rural population, is the principal method for achieving this. Two potential problems must, however, be born in mind. As many development authorities frequently have only scarce resources at their disposal, it is often found that, in an attempt to do the greatest good to the greatest number, the resultant houses that are constructed have been built at such low cost that the end result is little better than the quality of housing which caused the initial problem. Secondly, there is a temptation to take advantage of economies of scale and to create complete, new settlements in the middle of rural areas. Unfortunately, scant regard is frequently given to the local resource base and, accordingly, new settlements become rapidly deserted with nothing to sustain the new population.

2.6.4 Community Development Programmes

Finally, within the context of the existing settlement pattern, it can be advantageous to instigate a community development programme. This entails the establishment, in some villages and small towns, of community centres. These would have several advantages. Apart from simply providing a physical meeting place for villagers, such centres could be utilised to stimulate the development of community groups such as youth clubs, women's associations and sporting activities. This would have the advantage of helping to instill some community spirit and identity into the people of a village. Although community consciousness is already strong in many areas, its further strengthening can be directed to assist the development process, for it will encourage

a community to work for its own betterment.

In planning social/welfare programmes within the context of IRD, care must be taken not to divert too many resources from productive activities which could benefit the poor more effectively. If such a diversion occurs, the potential for generating additional resources for the future provision of welfare services may be reduced. It is therefore important to strike a balance within the overall framework of the rural development strategy. The ability to enable one responsible group to take an overview and to put all elements of the development programme into perspective is, however, one of the great redeeming features of IRD.

2.7 Infrastructure Component

Although a sub-division is created here for an infrastructural component, it will be realised that most aspects of infrastructure have been mentioned above in the discussion of specific facilities required for other developments. There is, therefore, little point in discussing in detail the infrastructural requirements of an IRD programme. These requirements are summarised in table 2.1.

2.8 Institutional Component

The complexities of rural development and the limited ability of the rural population to tackle the problems individually requires that formal and informal organisations be mobilised in order to achieve the goals of IRD. New institutions need to be created and old ones reconstituted and re-organised. Institutions have been described as

> '.....instruments through which a collective acts, applying its consciousness and faculties to change its environment, and in the process developing further its consciousness and faculties. Institutions provide a link in time, connecting the past, present and

Table 2.1 Infrastructural Requirements for an IRD Programme

Group	Element	Observations
Transport	Roads	
	Rail	inter-regional
	Bus Service	ultimately guaranteeing at least one bus per week to each village from major towns.
Communications		(See Transport)
	Telephone network	at least one telephone per village.
Utilities	Water supply	Primary requirement
	Power supply	Secondary requirement
	Sanitation	
Buildings	Schools	Primary in each village, Secondary in each town
	Skill training centres	
	Research centres	
	Health centres	
	Regional hospital	
	Housing	
	Community centres	
Miscellaneous	Rural industrial sites	
	Marketing/wholesale depots for agricultural produce	
	Credit outlets	

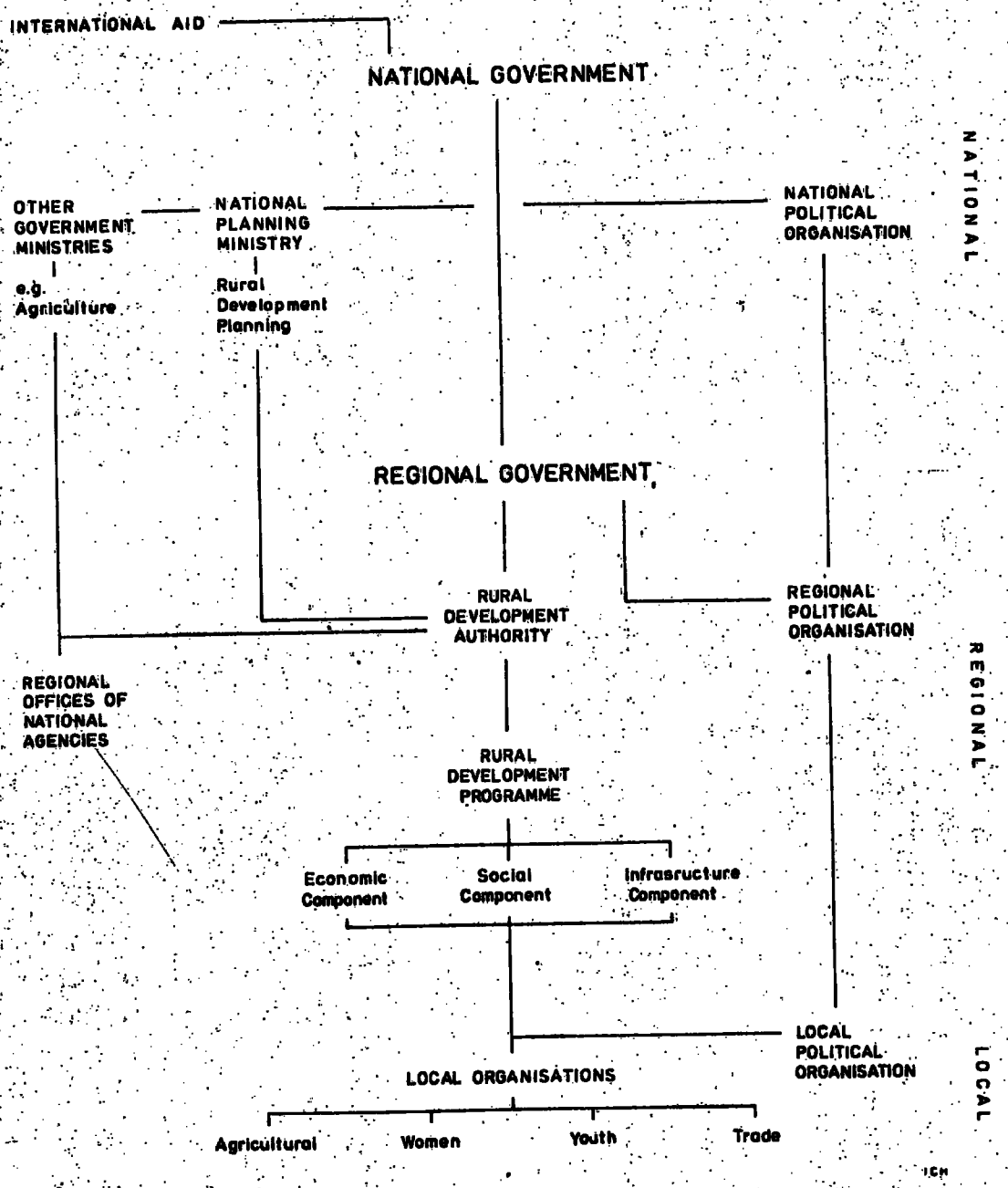
> future, and a link in space, connecting one group with another, horizontally and vertically. This link is provided by the delegation of authority, by the masses, to individuals and groups.'
>
> (Haque et al. 1977, part III).

As such, institutions thus play an important role in the development process. There are, however, potential dangers inherent in their construction and useage. Institutions can allow the grouping of people resistant to change who then operate through an institution to carry out the resistance. Institutions themselves can become so 'institutionalised' and bureaucratic as to become a stumbling block to the progress of development. One of the best ways to avoid such potential difficulties is to allow institutions to evolve naturally from the collective need to work together. Another danger of institution building is associated with the existence of wide social and economic inequalities amongst rural populations that have led to the creation of rural élites which, because of their economic, social and politically privileged position, have dominated the rural power structure. Steps must be taken (for example, land reform) to ensure that this élite does not continue to dominate the poor through control of the new institutions.

There can be no blueprint for institution building, but provided that the goals of development are borne in mind, that participatory democracy is used and that institutions are founded so as to be self-sustaining, then there is a good chance that institutions will succeed.

Figure 2.4 illustrates the institutional structure required for the implementation of an IRD programme. At the national level there are few new institutional requirements;

Fig 2.4 INSTITUTIONAL FRAMEWORK FOR AN IRD PROGRAMME



many of the functional units at this level will already be in existence. It may be practical or feasible, however, to create a sub-division of the national planning ministry with special responsibility for rural development.

The key unit for any successful IRD programme is the regional rural development authority. Although administratively a sub-division of the regional administration, it must inevitably have a strong and close working relationship with the national planning ministry. The regional rural development authority must have its own budget and adequate managerial and technical resources to carry out its work. It must also have sufficient authority to implement its decisions. The authority can be seen to have three main functions:

i) <u>planning</u> - the formulation of rural development plans for the region, based on national policy and local needs;

ii) <u>implementation</u> of the regional rural development plan which entails: a) establishment of a limited number of projects under its own direct responsibility and b) co-ordination with regional technical agencies of national ministries such as agriculture who bear responsibility for specialised development projects;

iii) <u>evaluation and modification</u> - all plans must be sufficiently flexible to cope with changing circumstances. The role of the regional rural development authority is to monitor plan implementation and to instigate and co-ordinate modifications where necessary.

Another key characteristic of IRD is the involvement of the populations in the development process. The whole issue of popular participation in development is widely debated (e.g. Cohen and Uphoff 1980, Higgs 1977, Hunter and Jiggins (eds) 1976), but the common element throughout all discussions

is the need to involve the population so that development is not imposed. Articulation and involvement of the masses is obviously carried out far more easily with groups than with individuals, and to take this a stage further, even more easily with special-interest groups. For example, some means of articulating farmers is essential, be it through co-operatives (Widstrand 1970, UNRISD 1975), farmers associations such as those of Taiwan (Hseih 1971), or the communes of the Chinese experience (Aziz 1978). The specific form through which peasants become involved in the development process will obviously vary with local conditions, but the inclusion of such groups as women, youth and trade organisations is an essential element for the implementation of an IRD programme.

2.8.1 Leadership

Regardless of the appropriateness of a development strategy, or of how well the institutional framework is structured, success depends on effective leadership at all levels. 'Capable and dedicated individuals have a major role to play in encouraging the people to undertake tasks which they themselves may not have thought possible'. (Haque 1977 part III).

Leadership at all levels must have a wide range of characteristics; commit ment, competence, continuity and succession (Khan, A. A. 1977, p.29). The most important function of the leader is that of link man. He is head representative of his organisation and as such must carry information to and from his organisation, both horizontally and vertically. A leader is also responsible for welding together the body of which he is the head. He must also be innovative in providing ideas and actions but, above all, his leadership must be directed to the organisation's ends - not

vice - versa.

Finding people with the necessary qualities of leadership is not easy. At the local level, leadership often already exists. It is up to the development authorities to utilise this leadership to stimulate rural development. At higher levels though, leadership can only be allowed to evolve from the overall cadre.

2.8.2. Political Element

Although it is beyond the scope of the thesis to enter into a detailed discussion of the political theory inherent in rural dvelopment (for such discussion, see Griffin 1974), two points need to be noted. Firstly, the whole rural development programme would fail completely without political support and commit ment to encourage change at all levels. Secondly, the political system is itself (in theory at least) an articulation of the masses and as such it is therefore essential to integrate it at all levels of the rural development process (figure 2.4).

2.9 The Spatial Component

Rural development functions in space; consequently, an IRD strategy must include attempts to organise that space. The basic functional unit within rural space is the family farm. These farms combine into villages. The village, within an IRD programme, should be used as the focus for the provision of all necessary utilities and services, such as schools, community centres and shops. The village is the basic unit of community life and is the smallest unit of collective identity; many of the local organisations which should be consulted in the development process are based on the village.

Villages themselves can be structured around composite rural centres (Weitz 1965, p.646). These, focused on

small rural towns, play an important role in IRD. All services not required in close proximity to the farmer, as well as those serving a large number of settlers, are located at the rural centre in order to lower costs and increase efficiency, e.g. tractor servicing, storage facilities, marketing and packaging facilities. Referring to the discussion above (section 2.5) on the need for more growth-centres as a focus for rural industrialisation and investment, it is the composite rural centre that will carry out this function (Shah 1974, Taylor 1975).

Finally, composite rural centres themselves combine to form a region, the focus of which is a regional centre - a major town that is capable of meeting all the economic, rural, administrative and cultural needs of the area.

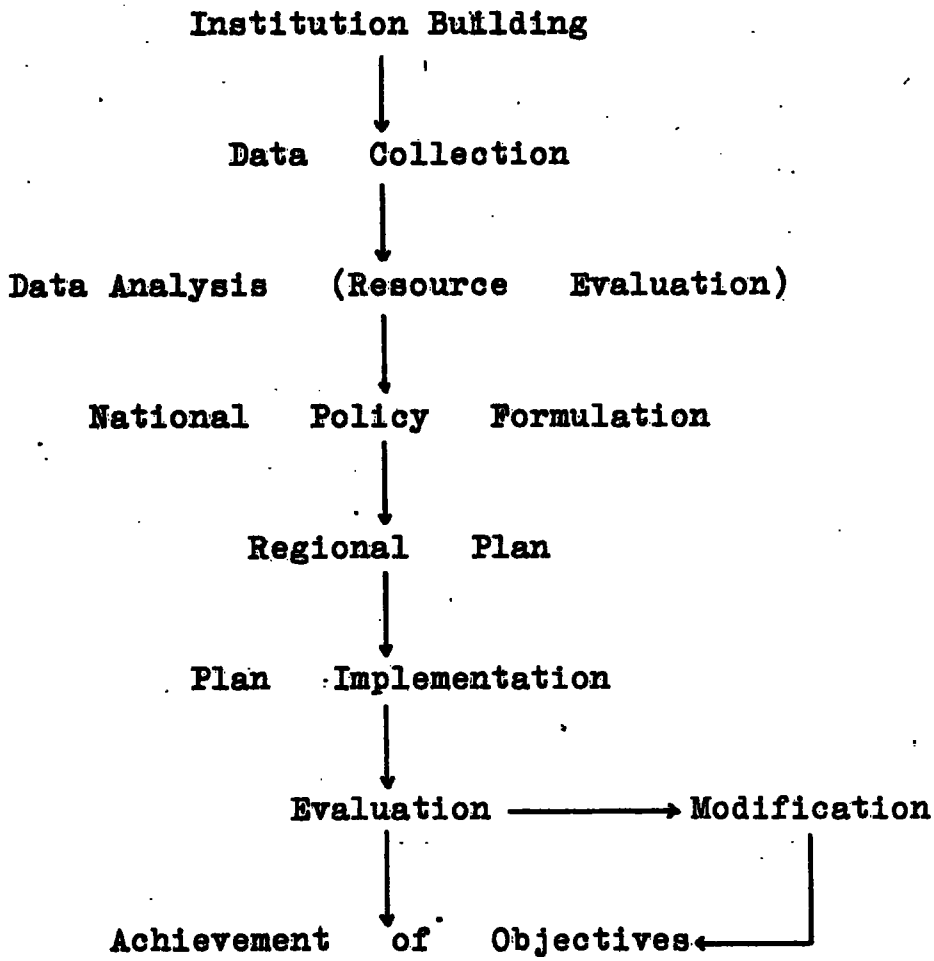
2.10 IRD Implementation

Although the essential unity of the development process has been emphasised (Smith 1977, p.201), it is still a process which implies a series of changes and actions over time. IRD as a process thus requires a temporal, sequential framework (figure 2.5). The sequencing in the diagram is self-explanatory but a number of points require emphasis.

The rural development process cannot be considered in isolation. At the national level, it must take into account both the international economic situation and any foreign assistance that may be available. The process must also be established within the context of the overall economic situation of the nation. At the regional level, rural development must be planned with consideration for complementary developments in the urban sector.

Secondly, the rural development programme must obviously lie within the limitations of the physical and human resource base. Use of available resources must be so planned as to

Figure 2.5 Implementation of an IRD Programme



maximise their potential value.

Finally, throughout the whole development process there must be free and open discussion by all bodies concerned. This is true from the inception of a plan, through its implementation, to final modification and evaluation. Development cannot be seen as a 'top down' process, nor as a purely 'bottom up' one; it must be seen as a process brought about through constant up and down communication flows.

2.11 Problems Associated with IRD

Particular problems associated with specific components of IRD have been highlighted throughout the above discussion. There are, however, a number of problems of a more general

nature to which attention must be drawn. The greatest difficulty inherent in an IRD approach is the physical co-ordination of the whole programme. Difficulties with this will be greatest at the inception of the programme but will ease with time as more experience of the task is gained.

Aggravating difficulties of physical co-ordination will be shortages of people with sufficient skills and adequate competence to cope with the complex programme. Again, this is a problem that will be greatest at the inception of the programme but one which will decrease with time. Importation of skilled personnel from abroad would ease the difficulties of the early stages.

A comprehensive data-bank is essential to the planning and implementation of an IRD programme, yet such a feature is absent from many developing countries. Data shortages have caused mis-directed planning and misallocation of resources in many development plans; the only way around it is to ensure the fullest possible research at the plan-preparation stage.

A final problem that may be encountered with an IRD programme is the power of vested interests. This problem was mentioned in relation to the issue of land reform, but unfortunately it is not a difficulty that is confined to the local level. Elites established under previous eras may continue to survive and, if such élites are land based, then they can act as a particularly powerful force contrary to development progress. To minimise the influence of such élites, two actions are suggested: the first is the erosion of the power base (by land reform if land is the base); and the second is to ensure full participation of the whole population in the development process.

Although difficulties will be encountered with the implementation of an IRD programme, it is felt that, provided full recognition and awareness is given to the possible difficulties, then even if they cannot be entirely eliminated, their impact can be minimised. None of the problems highlighted in the discussion of IRD are felt to be so great as to make the strategy unworkable.

2.12 Conclusion

Integrated rural development is thus seen as a viable strategy to tackle the problems of the rural sector in developing countries. Based on the region as the key functional unit, it takes a multi-sectoral, co-ordinated planning approach to the rural problem, seeking both to integrate and co-ordinate the variety of lines of attack and ultimately to increase the integration of the rural sector with the rest of the national socio-economic environment. The IRD approach comprises five major components which relate to the rural economy, society, infrastructure, institutions and space, each of which must be designed and implemented complementary to the other. Obviously there can be no rigid structure for an IRD programme to suit all circumstances, but the above discussion illustrates the main framework upon which any such strategy may be constructed. It inevitably has its problems, but IRD offers a strategy with considerable potential success for tackling the difficulties encountered in the rural areas of the developing world.

CHAPTER THREE

THE TUNISIAN RURAL PROBLEM

3.1. Introduction

Despite an increasing degree of urbanisation, Tunisia is still a predominantly rural country. Over 50% of the population live in rural areas and agriculture remains a significant element in the national economy. Although agriculture accounts for less than 20% of Tunisia's GNP, over 50% of the total work force are associated either directly or indirectly with the sector. It also provides for approximately 40% of the raw materials used by Tunisian industry and is itself a significant earner of foreign exchange (The Middle East, 58, 1979, p105). Yet the agricultural sector continues to suffer from many fundamental problems that must be overcome before it can provide the stable base to the national economy which the government intends it to be. Agricultural problems exist at all levels; at the grass-roots production level, within the agricultural economy and at the level of the integration of agriculture to the national economy. But the rural problem is not one of agriculture alone. The spatial disequilibrium within Tunisia, whilst partly a consequence of unavoidable circumstances, presents another group of problems to be faced in the rural sector. Also, the process of development and its associated changes that Tunisia has been experiencing in recent years has not only generated its own difficulties but compounded many of those which existed already. It is the intention of this chapter to examine the array of problems encountered in the Tunisian rural sector, with particular reference to the 1970s, in order to present a background to the IRD programme adopted by the Tunisian government.

3.2. Agriculture (Production)

3.2.1. Physical Resources

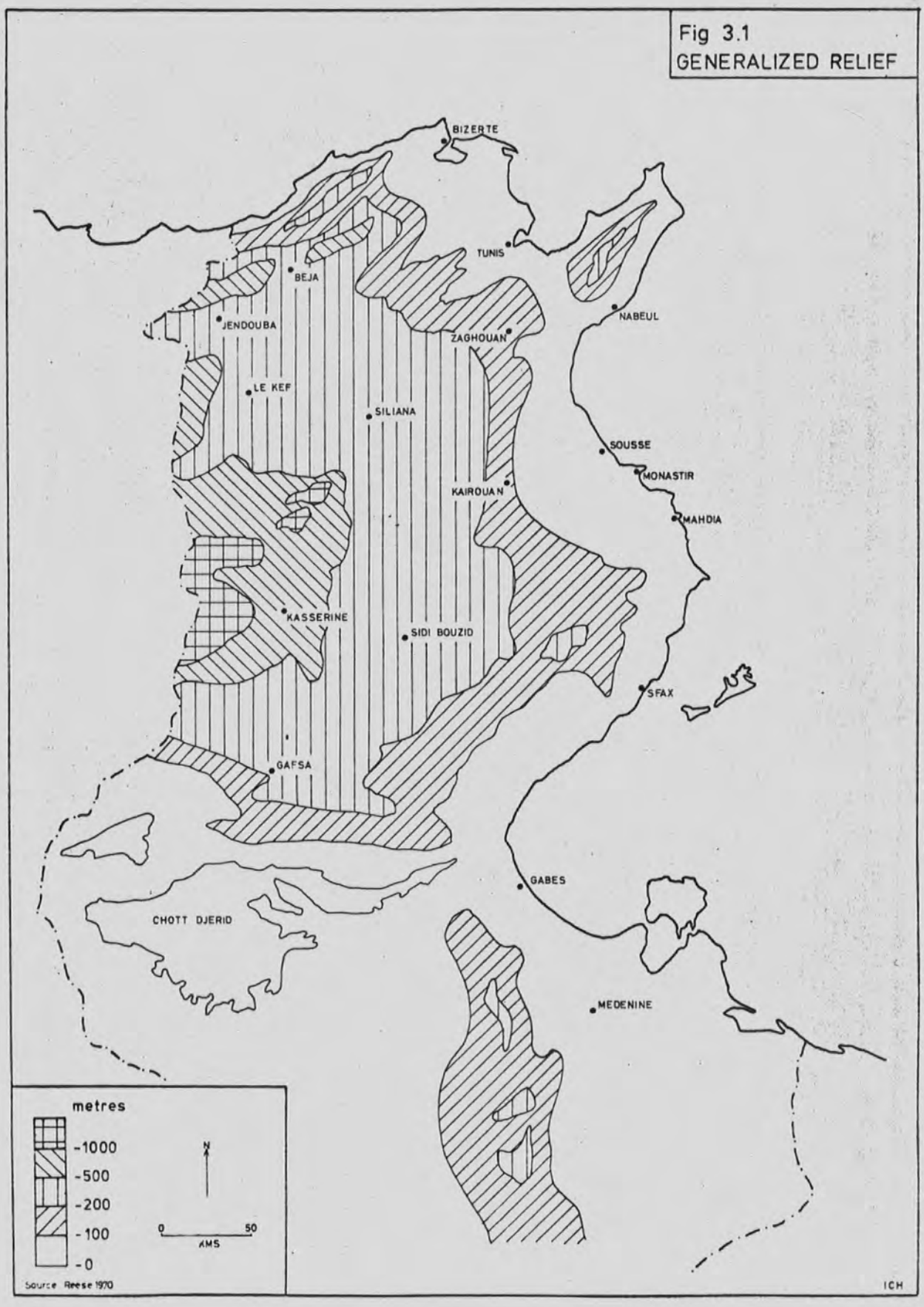
Without being overly deterministic, physical factors, in particular climate and relief, have imposed major constraints on rural activities in Tunisia (figures 3.1 and 3.2). The country can be divided into four main physical areas. North of the Dorsale, the mountainous divide which crosses Tunisia from the south-west to the north-east, is the Tell, the most productive area of the country. Average rainfall exceeds 400mm p.a. and in places is as high as 1500mm p.a. Although an area of considerable variation of relief, the main agricultural activity is extensive cereal cultivation. The Medjerda river, Tunisia's only perennial watercourse, flows through the heart of the area and is of considerable advantage to the region's agriculture. The plains of the lower Medjerda, and the Cap Bon peninsular area (to the south-east of the lower Medjerda) are particularly fertile.

South of the Dorsale are the Steppe lands of Tunisia. Extremely flat and very dry (mean rainfall varies from 200mm p.a. in the south to 350mm in the north), agriculture in this area is confined mainly to extensive grazing, with a limited area of alfa and cereal production.

The Steppes are bounded to the east by the Sahel, or eastern littoral area of Tunisia, centred on Sousse and Sfax. Maritime influences raise mean annual rainfall to between 300 and 400mm. This is the olive growing area of Tunisia, cultivated for centuries by small-scale sedentary farmers.

The fourth area is that of southern Tunisia. South of the Chott El Djerid and west of the Matmata mountains, the land is virtually all uninhabited desert; the desert area in Tunisia covers approximately 60,000 km^2. To the north of the

Fig 3.1
GENERALIZED RELIEF



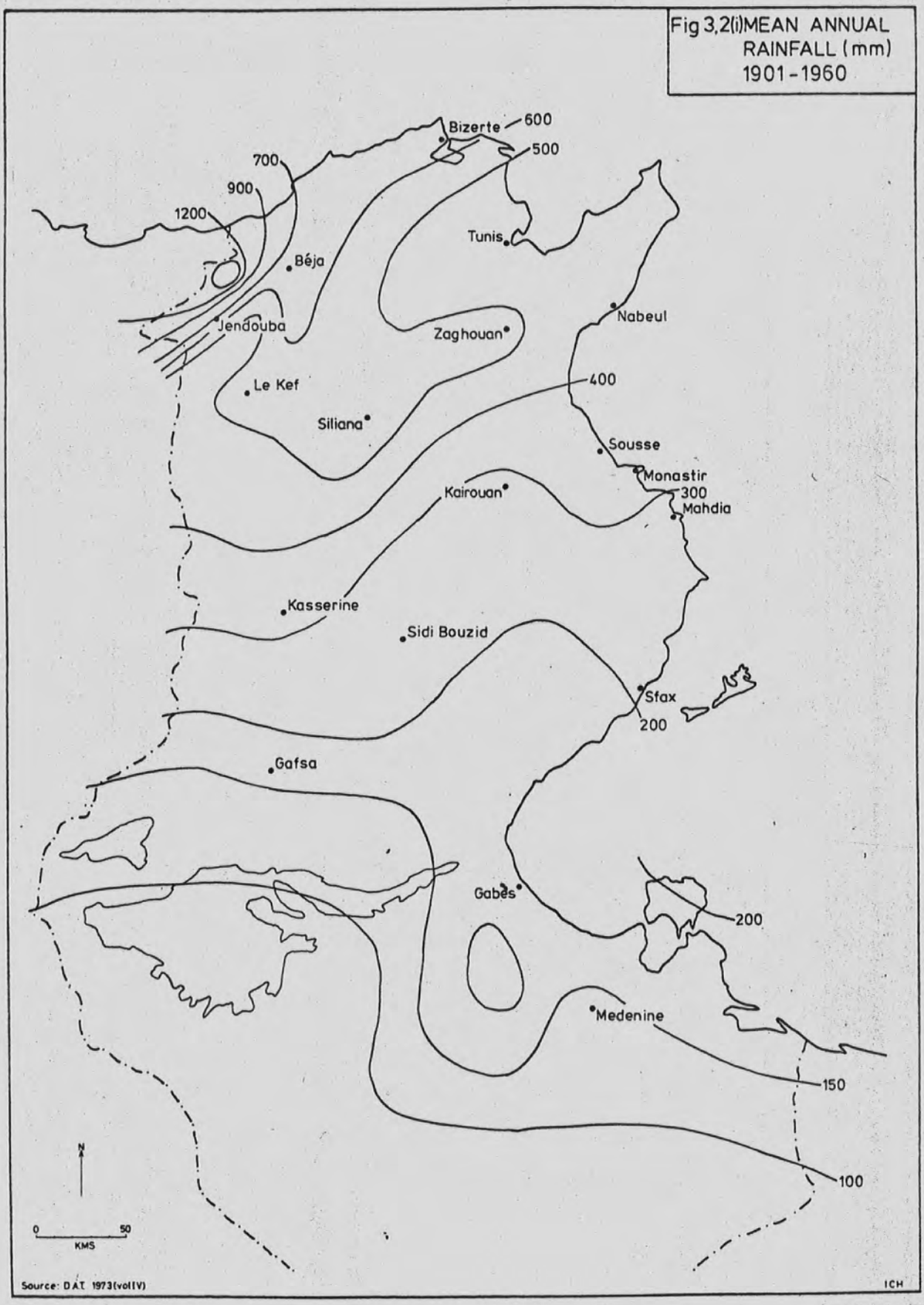


Fig 3,2(i)MEAN ANNUAL RAINFALL (mm) 1901-1960
Bizerte
600
500
700
900
1200
Tunis
Béja
Jendouba
Zaghouan
Nabeul
Le Kef
400
Siliana
Sousse
Monastir
300
Mahdia
Kairouan
Kasserine
Sidi Bouzid
Sfax
200
Gafsa
Gabès
200
Medenine
150
100
N
0
50
KMS
Source: D.A.T. 1973(vol IV)
ICH

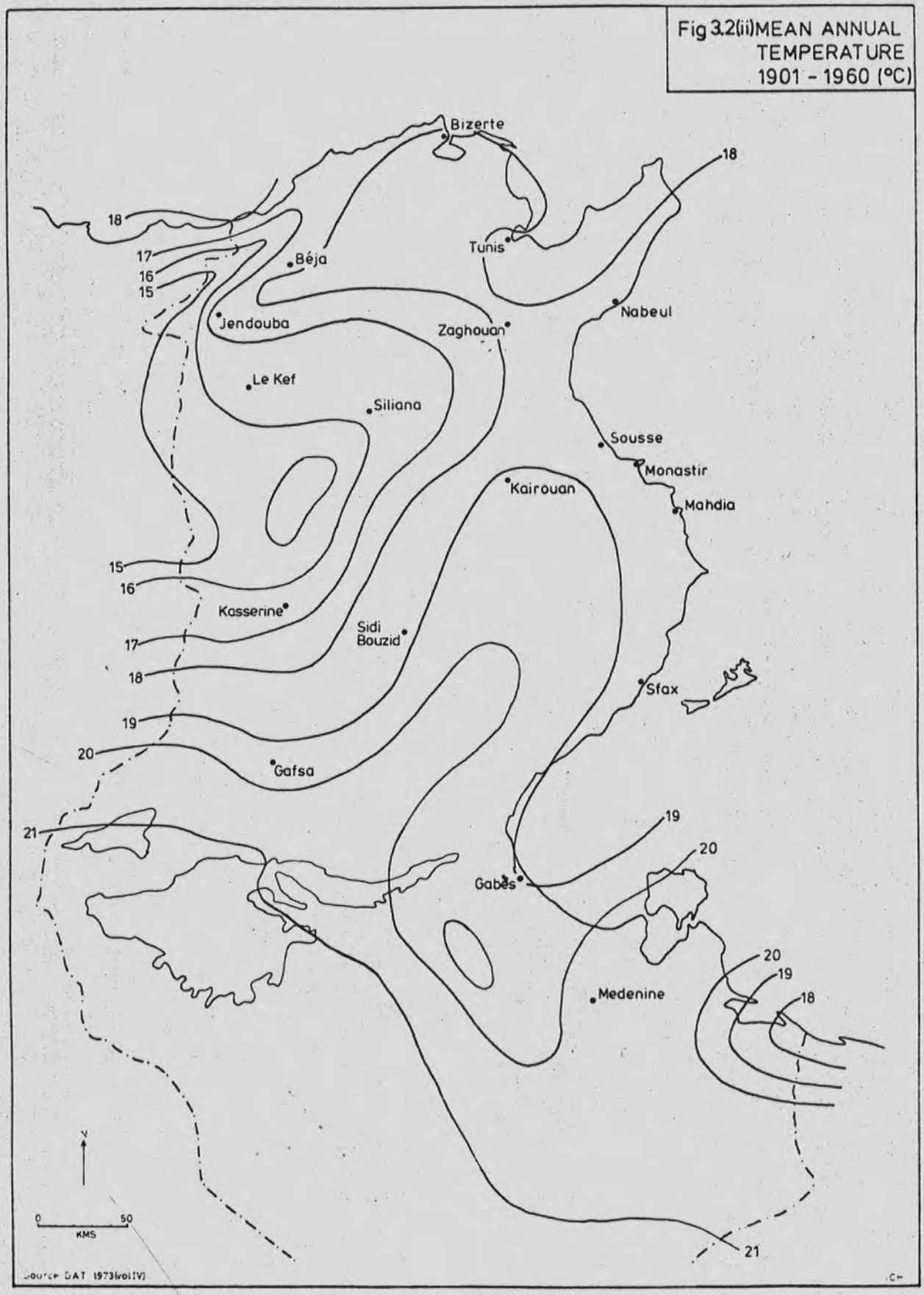


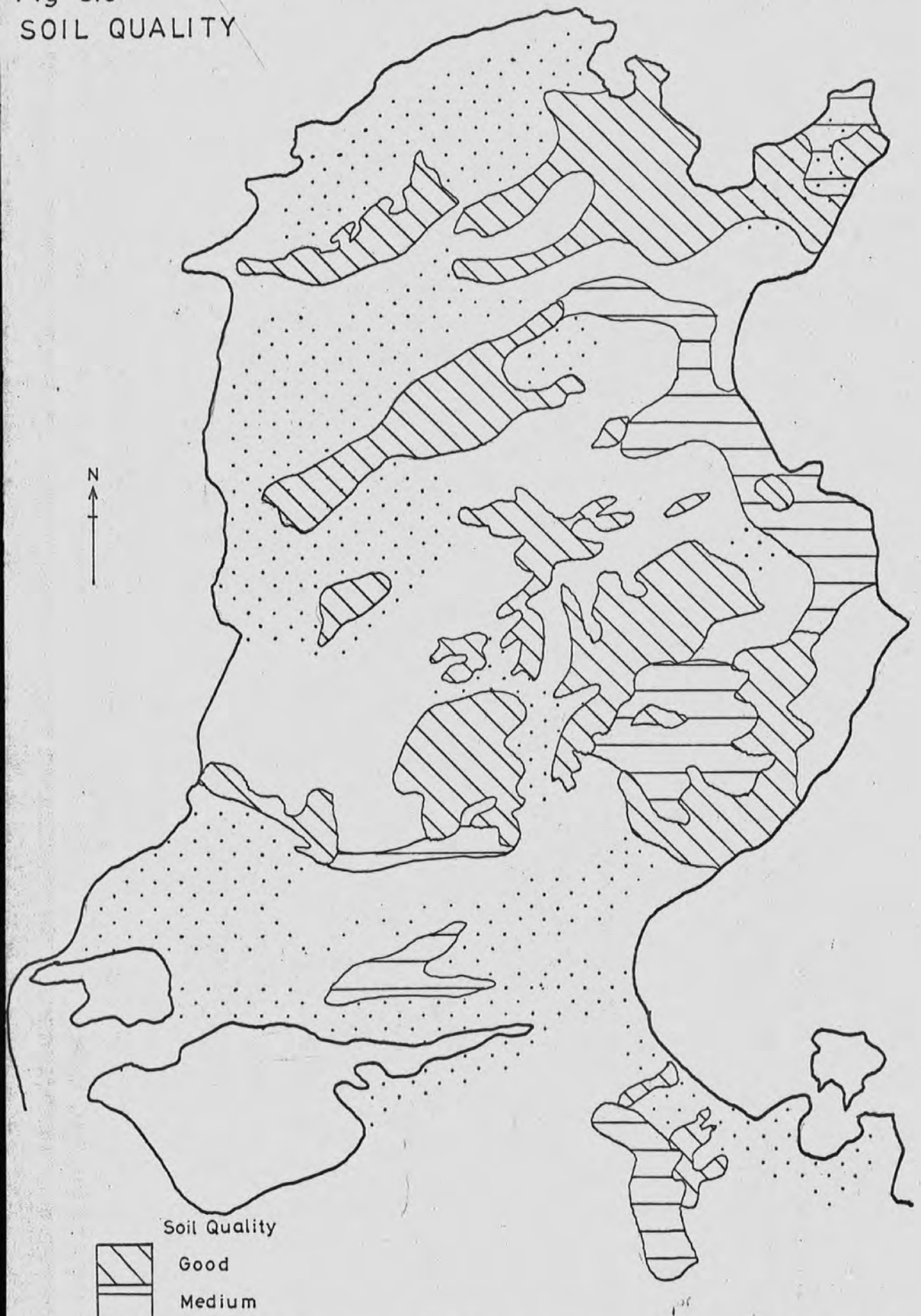
Fig 3.2(ii) MEAN ANNUAL TEMPERATURE 1901 - 1960 (°C)
Bizerte
Tunis
Béja
Jendouba
Zaghouan
Nabeul
Le Kef
Siliana
Sousse
Monastir
Kairouan
Mahdia
Kasserine
Sidi Bouzid
Sfax
Gafsa
Gabès
Medenine
18
17
16
15
19
20
21
N
0
50
KMS
Source DAT 1973(vol IV)

great chotts, and parallel to the coast, agriculture and rural settlement is confined to a number of large oases, particularly in the areas of Tozeur and Gabès. Average rainfall varies between 100mm p.a. inland to slightly over 200mm p.a. along the coast.

Two problems in particular need highlighting in relation to the national physical resources; water supply and soil quality. A map of general soil quality and susceptibility to soil erosion has been produced (figure 3.3). Based on criteria of soil texture, depth, drainage and salinity for the quality, and slope angle and soil texture for erosion, the map indicates a number of patterns.On the whole, the better soils are found in the North and the Sahel, but of greatest significance is the erosion factor. Erosion of the light, sandy soils throughout Tunisia has long been a problem (FAO 1975), but in some areas methods of cultivation have exacerbated the situation. In the Tellien regions and parts of the Dorsale,for example, the clearance of forests and the extension of the cultivated area up the slopes of the hills, particularly by the French colons, without due consideration for the change in vegetation, has resulted in severe erosional problems which the Tunisian government is now having serious trouble remedying (Poncet 1961a Kassab 1978a). Erosion problems are not helped either by the heavy flash-floods that are common in Tunisia.

Water supply is the major limiting factor to Tunisian agriculture. The rainfall data illustrated in figure 3.2. are mean annual rainfalls, but considerable variation occurs around these (table 3.1). In Jendouba,for example, total rainfall in 1973 was 667mm; the following year it fell to 341mm and in 1975 was 522mm; similarly, total annual rainfall in Sfax 1969-1972 was 651mm, 121mm, 160mm and 447mm respectively. Such

Fig 3.3
SOIL QUALITY



Source: DAT/
Groupe Huit
1973 vol IV

Table 3.1. Variation from Mean Annual Rainfall by Governorate (mm)

	Tunis	Bizerte	Jendouba	Le Kef	Kasserine	Gafsa	Medenine	Gabès	Sfax	Kairouan	Sousse	Nabeul
1965	+22	+78	-11	+24	+1	+24	-17	+98	+165	-53	na	-34
1966	-36	-36	-61	na	+3	-73	-39	-25	-26	-20	na	-88
1967	-111	-88	-117	-199	+96	-4	na	+26	+20	+57	-47	-27
1968	-103	-146	-78	-77	+27	+10	-57	-49	-1	+18	-57	-175
1969	+44	+102	+180	+9	+458	+123	+240	+154	+491	+453	+383	+48
1970	-95	-107	-121	-27	-99	-93	+20	-50	-39	-141	-16	+8
1971	+29	+241	-5	-55	-3	-23	+9	+36	0	-6	+107	+310
1972	+78	-11	+108	na	+66	+29	na	+13	+287	+130	+112	+38
1973	+311	+61	+203	na	+197	+149	na	+147	+145	+253	+358	+383
1974	-87	-65	-123	-160	+63	-42	+27	+19	-9	-30	+12	-140
1975	+110	+55	+58	-56	+152	+3	+257	+254	+152	+82	+190	+231
1976	+36	+35	+6	+72	+33	+74	+292	+148	+130	+144	+124	+66
1977	-154	-245	-174	-168	-157	+84	-48	-102	-40	-56	-86	-104
1978 (1)												
1979	+6	+5	-64	-8	na	+14	+82	-52	+30	-26	na	+126
Mean (2)	454	625	464	498	267	166	138	172	160	286	316	434

(1) No data available for 1978.

(2) 30 year mean.

Source: INS Annuaire Statistique vols. 21 - 24.

erratic rainfall is obviously not conducive to stable agricultural production. Occasionally, as in September 1969, Tunisia experiences periods of heavy rainfall over short periods which result in serious flooding with extensive damage, not only to crops, but roads, bridges and houses. More serious, however, are extended periods of drought. Over the 25 years 1945 - 1970, six serious droughts were experienced, three of which lasted for three successive agricultural years; 1945 - 48, 1959 - 62 and 1965 - 68. These resulted in considerable reductions of rural incomes and employment.

Rainfall within a year is also highly irregular. Often, in the wheat-producing areas, a year's crop can start well, with high expectations of good yields, but April will pass with no rain, causing the ears to dry out before the grain has a chance to develop. Alternatively, if the autumn rain falls early (ie, before September/October), then farmers have difficulties with necessary soil preparation and may even be prevented from sowing altogether. It has been estimated that, due to seasonal irregularities in rainfall, farmers of the Centre and South fail to sow their cereals one year in every five; and fail to harvest a full crop also one year in every five (Grissa 1973). It is only in the North that harvesting and sowing regularly take place, albeit with irregular yields.

Difficulties associated with irregularities of rainfall are mitigated to a certain extent by irrigation. Tunisia has an estimated potential 200000 to 250000 ha of irrigated land - 5% of the total cultivated area (Dargouth 1979). By 1979, 143 000 ha of irrigated land had been developed in the country. Water for irrigation comes from two main sources: surface water and subterranean water. Tunisia lacks a large natural reservoir of water such as the snow-capped Atlas mountains of Morocco, and as

a result, surface water potential is limited. However, estimated mean annual outflow of natural oueds is 2160 million m^3 (Ameur 1978). Distribution of this outflow is summarised in table 3.2. Inevitably, there are tremendous variations in mean outflow; the Oued Zeroud, for example, discharged an estimated 2580 million m^3 in one month in 1969 and in 1973 it is estimated that the Medjerda river carried 1 billion m^3 in just six days.

Table 3.2. Estimated Mean Annual Outflow of Natural Oueds for the Major Basins of Tunisia.

Region	Water Basin	million m^3	
North	Extreme North (Tabarka, Nefza)	260	1760
	Ichkeul	300	
	Medjerda	1000	
	Cap Bon, Meliane	200	
Centre	Centre (Nebhana, Sisseb, Kelbia, Meorguellil, Zeroud)	150	220
	Sahel (Sousse, Sfax)	70	
South	Baiech, Chott-Gherga, Ennouail	80	180
	Gabès coast, extreme South, Chott Djerid	100	
			2160

Source: Ameur 1978, p. 13

Major attempts to exploit this surface water have been made since the days of the French Protectorate. Efforts are now co-ordinated by four regional development offices: the Offices de Mise en Valeur de la Vallée Medjerda (OMVVM), de Nebhana (OMIVAN), de Jendouba (OMIVAJ) and de Lakhmès (OMIVAL). In addition, there are a number of smaller developments throughout the country. The construction of barrages has been the principal method of surface water exploitation. With an average

1550 million m^3 water stored in dams, approximately 70% of surface run-off can now be utilised (table 3.3).

Table 3.3 Barrage Development for Surface Water Exploitation

Water Basin	No. of Barrages	Total Capacity (million m^3)
Extreme North	2	212
Ichkeul	3	215
Medjerda	7	829
Cap Bon / Meliane	7	90
Centre	3	105
Sahel	-	10
South	2 (1)	90
		1550 (2)

(1) barrages alimenteurs de nappe

(2) includes 166 mill. m^3 in lacs collinaires

Source: Ameur 1978, p.14

Dam construction is most feasible in the North where rainfall and physical relief are favourable to their development. By 1985, with the completion of the Bou Hertma and Sidi Salem schemes, exploitation of surface water in this region will have realised its maximum potential. Elsewhere in the country, very little scope exists for further major water-storage developments, although a number of small dams are planned.

A number of problems are associated with dam construction in Tunisia, of which salinity is the greatest. In the Centre and South and in the lower Medjerda valley, because of the nature of the catchment areas, salinity is fairly high (1.2 to 2.0 g/l); it is only in the upper Medjerda that salinity is lower than 1.2 g/l. Salinity is also aggravated by high rates of evaporation.

In the face of rapid urbanisation, particularly in the

Tunis area, water demand for domestic consumption has mushroomed. As a result, several dams in the North, initially built to supply agriculture, are now being utilised for domestic purposes, thus reducing the availability of water for agrioulture. Tourist developments have also proved to be major competitors; water from the Nebhana dam, initially constructed to feed périmètres irrigués in the Sahel, is now being exploited by the hotel developments of Sousse/Monastir, particularly for swimming pools and garden watering.

High rates of erosion in Tunisia, resulting from the intense nature of Tunisian rainfall, pose a serious problem for dam construction. Large amounts of debris are accumulating in reservoirs, decreasing potential water storage. Also, mineral content of this debris tends to be high, adding to the salinity problem.

One of the major criticisms of the development of dams in Tunisia has been the lack of research prior to their development (Ameur 1978, El Amami 1977). In the first instance, little appreciation was made of the effect of barrage construction on ground water supplies. In some cases acquifiers have been drastically modified, some overfilled and some depleted due to obstruction of water supplies up- and downstream of nappes.

The emphasis in hydraulic development in Tunisia has been on large-scale developments which have mobilised major financial resources and have entailed lengthy periods of construction, hence implying investments which are not immediately productive. This insistence on large-scale irrigation projects has also led to the abandonment of operations which tended to promote small-scale traditional hydraulics essentially mobilising community labour. The traditional systems have the advantage of preserving

both water and soil and using local rainfall for the replenishment of ground water levels or as a complement to the water supply for crops.

Although the major irrigation schemes have led to the development of specialised research agencies (eg. CRUESI - Centre for Research into the Use of Brackish Water in Irrigation), much of the research has failed to include preliminary investigation taking account of local crops and existing traditional irrigation techniques. Consequently, there has been a failure to build on knowledge and skill already acquired by farmers.

Estimated total subterranean water reserves in Tunisia are 1100 million m^3, of which approximately 600 million m^3 are actually exploited (Ameur 1978). Regional reserves are summarised in table 3.4.

Table 3.4 Estimated Underground Water Reserves by Region

Region	Million m^3
Cap Bon and the North	150
Centre and Sahel	400
South	550
	1100

Source: Ameur 1978, p.15

Although the greatest reserves are in the South, subterranean water quality south of the Gabès - Gafsa line is mostly poor (salinity greater than 3 g/l). (Groupe Huit / DAT 1973, vol.5).

Two forms of exploitation of subterranean water can be identified - rurale locale and irrigation moderne. The first is associated with areas of traditional irrigated farming, such

as the Sahel (culture maraîchère), Cap Bon (agrumicole) and the oases of the South. Based on wells and, until recently, heavily dependent on animal power, this method was very inefficient. With the introduction of motor pumps and general improvements of traditional technology (such as the substitution of concrete drainage channels to replace mud-lined brick and stone channels), efficiency of water exploitation through this method has improved substantially - so much so that many acquifiers are now in danger of over exploitation.

Irrigation moderne is based on bore-holes and utilises modern techniques of water extraction from deep reservoirs. Because of the initial investment required for this mode of exploitation, irrigation moderne tends to be associated with the more formal and organised périmètres publics irrigués (ppis).

Thus, in addition to direct rainfall, Tunisia has access to a total mean annual surface water discharge of 2160 million m^3. A further 1100 million m^3 are available from nappes of which approximately 600 million m^3 are of suitable quality for domestic and agricultural useage. Consequently, total potential water supply is 2760 million m^3. In 1978, 130 million m^3 were distributed to urban areas and a further estimated 600 million m^3 were exploited for agriculture. Thus, just 30% of the total potential was utilised. Given a total estimated increase in demand of 3% p.a. from both agriculture and urban requirements, it would appear that Tunisia can meet domestic water requirements for at least the next 30 - 35 years. However, because of problems associated with barrages, the fact that much of the water is not where it is most needed, salinity problems, distribution problems and inefficient use of existing resources (eg 40% wast age of Nebhana water), a more realistic assessment of water availability suggests that, even with future developments such as

the Sisseb project (north Kairouan) and the Eau du Nord project, Tunisia will have a water deficit by 1990 - 1995. The limited water supply can thus be seen as one of the major limitations to Tunisian rural development.

3.2.2. Agricultural Production

The total surface area of Tunisia is approximately 16.3 million ha, of which 9 million ha are considered productive of vegetation (including mountain forest and semi-desert fit only for grazing). The cultivated area is approximately 5.6 million ha (35% of the total area), although this proportion fluctuates according to the weather. During the Protectorate the cultivated area was expanded at the expense of forest and grazing land (Poncet 1961 b). Although this process continued during the 1960s, it would seem that Tunisia has now reached the limit of land cultivation and that any further development must come from different methods of utilisation rather than an extension of the area under cultivation.

Tunisian agriculture is founded on cereal cultivation and arboriculture, primarily olives. Livestock husbandry plays an important role, particularly in the central area of Tunisia, and intensive market gardening is rapidly expanding to play an increasingly major part in national agriculture. Each sector has its own problems which are best highlighted through an examination of each sector in turn(1).

a) Cereal Cultivation: Cereal cultivation in Tunisia is dominated by hard and soft wheat and barley. Hectarage utilised for cereal production is variable, primarily due to fluctuations

(1) Data for this discussion is primarily from reports published by the Tunisian government, in particular INS Annuaire Statistique vols 21 - 24; Min. de l'Agriculture 1976 Préparation du Vème Plan - vols 1 - 2; Min. de l'Agriculture 1978 Budget 1979 - Agriculture et Pêche.

in the weather. South of the Dorsale, where barley production dominates, the area planted with cereals 1960 - 1970 declined by 40%; north of the Dorsale it decreased by 10%. This was mainly due to unfavourable climate and persistent drought 1965 - 68. Between 1970 and 1975, improvements in the weather enabled an increase in cereal area south of the Dorsale from 392,000 ha (1969 - 70) to 800,000 ha (1973-74). Climate fluctuations also inevitably affect yields (table 3.5).

Table 3.5 Cereal Yield - North Tunisia

Qx/Ha

Year	Hard Wheat	Soft Wheat	Barley
1974	10	14	10
1975	11	15	13

Rainfall 1974 108mm below mean
Rainfall 1975 41mm over mean

Min. de l'Agric. 1976

Susceptibility to climatic vagaries is possibly the most serious problem facing cereal production (Grissa 1973).

Despite rapid population growth, production of cereals is only increasing slowly (table 3.6). Lack of expansion has been due partly to the extension of other types of cultivation (fodder crops in the North and irrigated farming in the Centre and Sahel).

Table 3.6 Average Annual Cereal Production

Decade	Million Qx
1948 - 58	6.825
1959 - 68	5.350
1969 - 78	8.933

Min. de l'Agric. 1978

That any increase in production has occured at all in the face

of declining cereal area is due to increased yields - a result of improved fertilisation, seed selection, the introduction of HYVs and improved agronomic research (Thio 1979). But these developments have brought their own problems. Modernised farming entails increased costs which are frequently beyond the means of the smaller cereal farmers. Rather than continue with cereal production in competition with large-scale farmers who control greater resources, many smaller producers are changing to the production of other crops, particularly fodder, or even selling their land to the large landowners (Bouman 1977).

The shift has applied in particular to producers of HYVs and soft wheats. In the first place, farmers prefer to cultivate hard wheat, despite the higher yields of soft wheat, because this is the basis of several staple Tunisian food products and has a better guaranteed commercial outlet in the souqs throughout the country, often at prices above official levels. Secondly, although higher yields can be obtained from the production of HYVs under dryland conditions with a wider climatic variation than from hard wheat, this requires a greater degree of control in its cultivation, in seed-bed preparation, planting and harvesting. Such control is difficult to achieve and this limits the spread of the new crops (Purvis 1973, 1977). Yet it is with soft wheats that Tunisia is experiencing a serious deficit. Having been an exporter of cereals throughout the Protectorate, since 1960 Tunisia has imported an increasing amount of wheat, particularly soft varieties. In 1975, 3.2 million qx (20m TD) of soft wheat were imported; by 1977, this figure reached 7.2 million qx (36.8m TD) - almost equivalent to the total domestic soft wheat production of 7.46 million qx. In contrast, hard wheat exports have not exceeded 0.5m TD in value since 1970 (Kassab 1976 a, Kassab and

Sethom 1980).

Methods of cereal cultivation in Tunisia are not fully realising production potential. Overall efficiency probably peaked during the latter years of the Protectorate. With the colons using mechanised methods of cultivation and the larger Tunisian farmers imitating, production was close to achieving maximum potential productivity for that time (Dutton 1972). Since independence and the upheaval of the cooperative movement, there is strong evidence to suggest that efficiency has declined (Kassab 1978 a). On the large farms the structure of land ownership is such that there is little incentive for the actual producer to maximise yields; on the small farms there is an unwillingness and inability to undertake the financial risks associated with capital developments, such as mechanisation.

b) Arboriculture: Arboriculture is the fastest growing agricultural sector in Tunisia. In 1962, 941,000 ha were cultivated for tree crops; by 1976 this had risen to 1.65 million ha. More than 40% of agricultural working days are devoted to tree crops, and their yield accounts for just less than half the total value of agricultural production (Kassab and Sethom 1980). Arboriculture is not evenly distributed throughout the country. Two-thirds of the total hectarage are located in the eastern coastal regions, but since independence, tree cultivation has undergone a remarkable extension into the centre of Tunisia, particularly in the regions of Kairouan and Jendouba. Average age of plantations is low; 47% of olive trees and 30% of almonds have not yet reached peak productivity. Expansion of arboriculture was particularly rapid 1960 -1970 - in many ways too rapid. A large part of the new plantations have

consequently not had the necessary care and maintenance. Expansion of tree crops has slowed down in recent years.

The dominant tree crop is the olive (53.2 million trees 1976, 1.25 million ha). Like cereals, the olive crop is particularly susceptible to climatic variation, not helped by the fact that olive trees produce a crop just once every two years. Average annual olive production 1960 - 1970 was 65000t; in 1966 - 67 (a dry year) production was just 20,000t . Although nationally the age structure of the olive crop is broad (in 1976, 19% were less than 10 years old, 25% were 10 - 20 years old, 48% 20 - 80 years old and just 8% were past peak productivity - Kassab and Sethom 1980), in certain areas, particularly the Sahel, olive trees have been poorly maintained and are dominated by old trees.

Other fruit trees common in Tunisia are almonds, citrus fruits, pomegranites, apples, pears, peaches, figs and dates, of which almonds are the most significant (206000 ha, 13% of total tree crop area 1976). All non-olive tree farming (with the exception of citrus fruits in Cap Bon) is really a product of the post-Second World War era. Given the major expansion of such crops since the war, the main problem with tree crop production in Tunisia has been to find a market for the goods. Even with the development of the tourist industry, saturation point now seems to have been reached on the domestic market for all fruit tree crops, excluding olives.

c) Market Gardening: Over 80% of market gardening in Tunisia is irrigated. The area cultivated for market gardening is increasing (33000 ha 1961, 84000 ha 1976) but remains concentrated in a limited area, primarily Nabeul, Tunis, Bizerte and, to a lesser extent, the Sahel. Although only representing 2% of the cultivated area, the sector contributes 15% of agricultural GDP. Market gardening is obviously less susceptible

to climatic fluctuations than other crops and production is accordingly more stable than that of either trees or cereals. Three main crops are produced, tomatoes, pimentoes and potatoes, which in 1978 covered 17550 ha, 13700 ha and 9500 ha respectively. These are supported by a wide range of other irrigated crops including onions, artichokes, courgettes and cucumbers which occupy a total of 26500 ha. Problems associated with this sector are fully discussed below (Chapter 8) but can be briefly summarised as: high capital costs to the small farmer, unsuitable land ownership structure, inadequate knowledge of techniques amongst farmers, a poor marketing system for highly perishable goods and wast age of resources.

d) Livestock Rearing: As with cereal cultivation, the area utilised for animal husbandry is declining rapidly. This can be attributed to two factors; the extension of cultivated land in certain areas of the North and Centre; and the government programme of reafforestation. Despite the decrease in the grazing area, the actual number of animals is increasing. Since the disastrous decline in livestock numbers associated with co-operativisation in 1968 - 69, the livestock herd has increased rapidly. Yet there remains a serious shortage of meat and dairy products in Tunisia. The development of improved breeds, extension work, cross-breeding and artificial insemination have not eased the situation. Part of the problem is a lack of fodder to meet livestock requirements. Government incentives and encouragement to produce fodder crops on irrigated areas is ameliorating this situation, but only slowly (Damergi 1980). A second component of the problem is the decline in grazing lands due to the extension of the cultivated area, and to the fact that almost all the nomads who were responsible for the upkeep of large flocks and herds on the central steppes have

now settled. However, the largest part of the problem is simply that increases in domestic demand are far outstripping increases in domestic production. Consequently, Tunisia continues to import large quantities of animal produce (3.5 million TD 1975, 5.5 million TD 1977). Pinet des Forest has identified a long list of problems that he sees as the cause for the animal product deficit, but in effect, many of these problems are common to the agricultural sector as a whole (Pinet des Forest 1976). The point made by Pinet des Forest is that, whereas other agricultural sectors suffer from some of the problems, animal husbandry suffers from them all. Unfortunately, despite claims to the contrary, livestock farming would appear to be very low on the government's development priorities, and until this changes, there is little chance that Tunisia will reduce its meat and dairy product import bill.

3.3. Agriculture (Economy)

3.3.1. Land Structure

Land ownership structure in Tunisia reflects the government's characteristic philosophy of a strong mix of state, private and co-operative sectors. It has been claimed that the dualistic nature of Tunisian agriculture is the fundamental problem which hinders its development (Duwaji 1967, 1968). In reality, the situation is far more complex. A degree of duality certainly exists in the private sector, but the existence of large state farms and co-operatives distorts this simplistic structure. Detailed statistics on land ownership in Tunisia are difficult to obtain due to inadequate systems of land registration; nevertheless, inferences can be made on the problems associated with the land structure from the general statistics that are available.

a) Colonial Heritage: The impact of the colonial era on rural Tunisia has been fully documented elsewhere (Dutton 1972,

Knapp 1977, Ling 1967, Poncet 1961b). Suffice it to note here, that on the eve of independence approximately 785 000 ha were owned by Europeans, of which 715 000 ha were owned by French *colons* (Grissa 1973). Although this represented only 13% of the total cultivated area of Tunisia, its contribution to agricultural production far exceeded this ratio. European farms were located in the more fertile areas of the country, particularly in the North and the Sahel of Sfax. They tended to be larger (many were over 200 ha), better farmed and better equipped than many of the Tunisian concerns, and at this stage there is no doubt that agricultural dualism was very pronounced. Although a certain number of larger Tunisian farmers were able to benefit by imitating the *colons*, most worked small plots of land by traditional methods for remuneration little over subsistence level.

b) *Early Years of Independence:* At independence, land tenure in Tunisia was characterised at one extreme by fragmentation of small plots, and at the other by large, consolidated estates. Two other significant elements were the *habous* (religious) land and the collectively-owned land in the tribal areas of central Tunisia.

In 1956 there were an estimated 1.15 million ha of *habous*, of which 150 000 ha were public and the remainder either for the benefit of private individuals, or mixed public and private. Much of this land was poorly maintained and badly utilised. Consequently, one of the first actions of the new Tunisian government was the abolition of the public *habous* (May 1956) and its incorporation in to the state domain. This was followed in July 1957 by the abolition of private and mixed *habous*, the private returning to its original owner and the State becoming part owners of the mixed.

Immediately before and after independence, many European farmers succeeded in selling their land to Tunisians. This inevitably led to a flight of capital which the Tunisian government was obliged to halt. Sales of European farms thus had to be authorised and the proceeds of such sales placed in special bank accounts and spendable only in Tunisia. This still left the problem of foreign-owned land. French farmers were naturally unwilling to sell land if proceeds had to remain in Tunisia, yet their position of insecurity discouraged any land development or investment. Eventually, two protocols were signed with France in 1960 and 1963, through which France was to help Tunisia with the purchase of up to 100 000 ha from the remaining French-owned land. However, before the protocols were allowed to run their full course, the Tunisian government nationalised all remaining European-owned land in May 1964.

With regard to the collectively-owned land, it was recognised that under the traditional systems de facto usufruct rights could be exercised, but not de jure individual ownership rights, which permit such land to be alienated and made subject to commercial transactions. But definite individual appropriation of collective land has always taken place in the past with the apparent or tacit approval of the community. The government wished to transform these appropriations into legal ownership titles, but despite legislation to encourage land registration, had little success. Tenure of collective lands was thus very insecure and little incentive existed to ensure owners maintained their land to its maximum potential.

Thus, by 1964 the government had acquired more than a million ha from habous land and ex-colonial farms. In addition, it was faced with the problem of how best to deal with large areas of collectively-owned land with tenuous incursions of individual ownership rights. Fragmentation and absentee

landlords compounded the tenurial difficulties of the land structure. It was against this background that the co-operative movement of the 1960s gained full momentum.

c) The Co-operative Era: Documentation of the Tunisian co-operative movement is extensive (Apthorpe 1977, Ashford 1967, Ben Salem 1976, Van Dooren 1978, Grissa 1973, Makhlouf 1976, Simmons 1970, 1971), and there is little point in presenting a full discussion of it here. However, in order to place the developments of the rural sector during the 1970s in their proper context, a brief summary of the co-operative era is required.

Co-operatives in Tunisia date back to the early 20th century - service co-operatives have long been common amongst the fruit growers of Cap Bon. However, with the marked move toward socialism by the national political movement in the early 1960s, co-operatives became more widespread. Initially, they were founded on the ex - colon farms, using these lands as nucleii for Unités Co-operatives de Production (UCPs). In addition, polyculture co-operatives were established, particularly in the Centre and South on collectively owned lands, service co-operatives were extended, and in certain areas pre-co-operatives were created. By 1968 agricultural co-operatives extended over much of the country (table 3.7).

During the early months of 1969 the amount of land under state control increased threefold to include all the cultivated area of Tunisia. But in September of that year, the Prime Minister announced that all private holdings could be withdrawn from the Unités. Within the space of two months the area controlled by co-operative management dropped to 13% of its former level.

The reasons for the failure of the Tunisian co-operative movement are many and complex (Ben Salem 1976, Makhlouf 1976).

Table 3.7 Extent of Tunisian Agricultural Co-operatives 1968

Region		UCPs	Livestock Coops	Polyculture Coops	OTD	OMV	Others	Total
North	no	339	6	20	3	3	128	712
	ha	353283	2326	49952	4620	5631	12954	604373
Centre	no	3	-	80	-	1	12	143
	ha	1859	-	317185	-	200000	1272	593452
South	no	2	53	53	1	2	22	180
	ha	3284	18	208938	23464	156833	3535	597665
Total	no	344	59	157	4	6	162	1035
	ha	358426	2344	596075	28084	362464	17621	1795490

OTD Office des Terres Domaniales
OMV Offices de Mise en Valeur

Source: Simmons 1970.

The fundamental fault, however, lay in the way in which the co-operatives were imposed from above with little concern for the economic and social systems to which they were grafted. In particular, co-operatives were too much of an important tool for national economic development policy objectives to be allowed too free a rein in the management of their own affairs. In addition, management inefficiencies and resentment from all ex-land owners added fuel to the fire. A final blow came with the disastrous weather 1967 - 69. Two years of drought, followed by severe flooding, destroyed much of the co-operatives' capital. As it was, most co-operatives were making a loss and could ill afford such catastrophes. It was, therefore, hardly surprising that the co-operative movement collapsed.

Compared to their construction, the demise of the

co-operatives was brief. The co-operative movement was formally ended by a Council of the Republic and a law passed in September 1969 re-affirmed the coexistence of three sectors: state, co-operative and private. Production co-operatives in areas of extensive cultivation, constituted prior to January 1969, were to be maintained; those established after that date were to continue only if success was likely. From January 1970 onwards, private lands were rapidly taken out of the co-operatives and virtually the whole co-operative system was dismantled. Nothing was left of the old production co-operatives in the North or of the polyculture co-operatives, but the state-owned nucleii (209000 ha in the North, 130000ha in the Centre and South). The great part of income-producing livestock and materials for farming from the dissolved co-operatives was sold at auction.

In May 1970 a law establishing sale of public lands was promulgated. State lands not constituted as production or polyculture co-operatives were passed to the OTD for sale. It is difficult to establish exactly how much state land was eventually sold, but it is certain that the volume of sales came nowhere near the quantity anticipated.

d) Land Ownership in the 1970s: The phase of general decollectivisation was a success. By the end of the process not a single hectare of private land remained in the co-operatives On the other hand, the sale of state land had raised a number of difficulties.

From 1969 to 1971, technical and scientific rationale on the land had been subordinated to the politicians. Technicians who had for years advocated the grouping of land in order to achieve diversification and technical progress in farming, found it difficult to accept the complete disbanding of the established

co-operatives, particularly when they saw land reverting to old, inefficient methods such as biennial rotation. It was also difficult for them to watch the neglect of new orchards and the abandonment of new innovations such as fodder crops.

Gradually though, the technicians began to be heard and in 1972 the splitting up of state property was halted. Since that year the land structure in Tunisia has stabilised to a certain extent, but each sector, private, state and co-operative, has its own attendant problems.

Despite the upheavals of the 1960s, by the mid-1970s the structure of privately-owned Tunisian land was barely different from that of the mid-1950s (table 3.8). Over 40% of the farmers owned slightly more than 6% of the total agricultural area on farms of less than 5 ha; whereas 40% of the land was owned by just 4.2% of the farmers on farms over 50 ha in size. In addition, the size of the body of landless labourers remained virtually unchanged.

Table 3.8 Privately Owned Agricultural Land 1975

Farm Area (ha)	Number of Farms	(%)	Total Area (ha)	%
0 - 5	133000	40.8	307000	6.1
5 - 10	73000	22.4	512000	10.2
10 - 20	64000	19.7	888000	17.7
20 - 50	42000	12.9	1304000	26.0
50 - 100	83000	2.6	562000	11.2
100 - 200	3000	0.9	427000	8.5
200 - 500	1500	0.5	468000	9.3
>500	600	0.2	554000	11.0
Total	325400	100	5022000	100

Source: Pinet des Forest 1976.

Although the ownership structure has changed little, tenurial arrangements are undergoing modification (Bouman 1977),

Small farms in Tunisia are predominantly owner-cultivated. Obviously, because of their size, resource availability is limited and therefore ability to undertake investment and land improvement is restricted.

On medium and large-scale farms, however, there is an apparent increase in the number of properties being rented to farmers, with the proportion of tenant-occupied to owner-occupied increasing with improvements in soil quality. Until recently, fixed tenancy was the usual arrangement under which large-scale farmers rented good land. Tenancy contracts, though, being of short duration, did not encourage the tenant to make lasting improvements. Fertility and yields rapidly decline when no precautions are taken against soil exhaustion. The only remedy is to rent more land to compensate for lower benefits per hectare. Such is the situation in northern Tunisia and it involves much of the country's best soils. Since the demise of the co-operatives there had been a shift toward shared tenancy as opposed to fixed-rate tenancy. This reflected the rise in costs of extensive farming, particularly in the face of the spread of HYVs and new farming technology, and also a change in risk aversion by both lessee and lessor. Yet, despite the shift in tenurial arrangements, there is a marked lack of motivation amongst farmers to invest time, money and effort to bring about much needed changes in agricultural practices. Although limited adoption of improved cultivation methods can be noted amongst small farmers and full-time agriculturalists (ie landowners farming their own land), the same is not true of the larger, tenanted farms where owners take little interest in their land and tenants find little incentive or motivation to improve the land.

Although the government officially recognises a distinction between the state and co-operative sector in agriculture, in

reality there is little difference, both sectors coming under the control of the OTD. In 1978 the OTD was responsible for 1.02 million ha, 44.5% of which is organised into agro-combinats, fermes pilotes and UCPs. The remainder is available for sale to private landowners and at present is rented out (Kassab 1977b).

There is very little difference between the agro-combinats and fermes pilotes of the state sector and the UCPs of the co-operative; staff of the latter are co-opérateurs, those of the former are salaried workers, but both share in the profits. Production on both is closely managed by state officials and is determined to a large extent by national agricultural policy objectives.

Theoretically, the role of the secteur étatique is defined as research, experimentation, promulgation of knowledge, provision of extension and demonstration of exemplary standards. In reality, practice falls short of these objectives. State involvement and excessive bureaucracy restrict efficient management of these farms. Although the basic idea is sound, unfortunately agro-combinats and fermes pilotes are unable to realise their full potential.

Similarly, although many of the UCPs are now financially viable, they still fail to operate as efficiently as they might. For example, just 3.5% of the cultivated area on the UCPs of the North is utilised for leguminous crops, this despite their importance in crop rotation systems. Yet over 20% of the cultivated area is devoted to fruit orchards, in spite of the fact that the Tunisian market is virtually saturated with fruit crops.

3.3.2 Agricultural Extension

Agricultural extension in Tunisia operates at three levels:

i) national level, through mass media, journées d'information,

national conferences etc. At this level extension is organised by the Ministry of Agriculture and covers general themes;

ii) regional level, at which it is predominantly administrative and non-specialised;

iii) project level, primarily through individual contact, material aid and local information meetings. (Thio 1979).

Much of the extension work is organised through the state offices such as the Office des Céréals, Office de l'Huile and the OTD. Within the Ministry of Agriculture, however, the Division de la Vulgarisation Agricole exists to bear overall responsibility for extension work. Unfortunately, this office is dominated by administrators. It would appear that its work is concerned far more with statistics collection and national and regional organisation than with the actual diffusion of information. Extension staff at national and regional levels are summarised in table 3.9. 'Engineers' are primarily administrators. Although 'technicians' include a number of workers who have completed specialised training at lycées agricoles, the majority are without any such training.

Table 3.9 Extension Personnel: National and Regional levels

	1967	1972	1976
Central Service			
Engineers	9	12	20
Technicians	-	14	40
Animatrices Rurales	-	-	2
Regional Service			
Engineers	49	25	45
Technicians	530	337	660
Animatrices Rurales	-	-	58

(Thio 1979)

In particular, five major problem areas have been identified with regard to the Tunisian extension service:

i) little information is available which is of specific value to small farms;

ii) extension workers lack the means for achieving individual contact, both in terms of numbers and availability of suitable transport;

iii) extension workers tend to be overburdened with administrative work;

iv) directives from central offices rarely take local conditions into account. Consequently, workers are often faced with applying objectives which may be realistic at the national level, but which are totally unrealistic at the local level;

v) work conditions for extension workers are not good, and as a result the job appeals to few people. In addition, visits deep into the countryside are unattractive to people who prefer to work from comfortable town-based offices.

Although general agricultural extension work is poor, that which is associated with specific projects tends to be of a much higher quality. This applies in particular to extension work associated with OMVs and with the various sectoral offices. For example, in 1976 the Office d'Elevage et du Pâturage employed 156 specialist workers to operate at the regional level. Unfortunately, much extension work undertaken within special projects has been characterised by duplicity, overmanning and lack of co-ordination.

3.3.3 Credit

The major agricultural credit institutions in Tunisia are the Banque National de Tunisie (BNT) and the Caisses Locales de Crédit Mutuel (CLCM); in addition, private credit plays a significant role.

The BNT operates on a commercial basis, loaning money only when risks are minimised. Consequently, only the larger farms, generally those over 40ha, have access to BNT credit. The main function of the BNT is the provision of medium-and long-term capital to large organisations, to special funds concerned with agriculture, such as the Fonds Spéciale de Développement de l'Agriculture (FOSDA) or to the UCPs.

The CLCMS, supervised by the BNT, are the main source of short-term credit for the small farmers. Unfortunately, their economic position is deteriorating rapidly; they are experiencing severe cash-flow problems and get no aid from the state. The difficulties lie in the fact that they deal only with short-term credit (ie credit to farmers for the agricultural year). Normally, the financial reserves of these local credit banks are topped up after each harvest, but this inevitably makes them highly vulnerable to poor harvests. Also, because they deal with many small transactions, operating costs are high, yet returns frominterest proportionally low. It is therefore difficult to operate these Caisses on an economically viable basis. Confidence in them has declined and small farmers are now finding their main source of credit disappearing.

In addition to the BNT and CLCM are a large and diverse number of organisations which offer credit under a variety of terms and in different forms. These include the various agricultural product offices, the OMVs and the Programme du Développment Rural (PDR). In some cases, credit is given en nature (ie in the form of goods rather than cash), in others, as grants or loans which can be provided on short, medium and long terms. The problem with such organisations is a complete lack of co-ordination. Farmers are faced with a

range of credit sources and have often been found to be borrowing from one organisation in order to pay back credit obtained from another.

The problems associated with agricultural credit in Tunisia can thus be summarised as follows:

i) a wide range of credit sources, many of whose functions duplicate each other;

ii) much credit is available only to larger agricultural concerns because of the prohibitive guarantees required from small farmers;

iii) there is a noticeable mistrust amongst peasants of credit sources;

iv) credit availability in many instances is abused;

v) owing to excessive administrative structures, delays are experienced with the granting of credits, particularly from the BNT and CLCM where credits have to be cleared at central offices;

vi) insufficient staff at local levels to assist with the distribution of credit.

3.3.4 Price Control and Subsidies

Whilst government subsidies to agriculture do exist in Tunisia, they exist only on a limited scale. Subsidies come under a variety of forms, such as reduced tax on petrol for agricultural purposes and special funds to meet exceptional circumstances (such as floods). Although limited, these direct subsidies do appear to operate reasonably effectively.

The national agricultural pricing policy is not so effective. Although attempts are made to control prices, both to guarantee minimum returns to farmers and to keep market prices at predetermined levels (wheat, sugar beet, milk and tomatoes are amongst products with controlled prices), the

system lacks co-ordination and efficient implementation. Enforcement of pricing policies is not rigid. No 'Blackmarket' as such exists, but certainly producers succeed in selling goods above fixed price levels, thus breaking down the effectiveness of the existing limited system of price controls.

The absence of a widespread and organised pricing policy and set of subsidies is a serious shortcoming in the Tunisian agricultural sector. A balanced system of 'punishment and reward' through such means is one of the best methods to encourage farmers to adopt new production techniques and to strive for the production levels determined by national objectives.

3.3.5 Research and Training

Agricultural research in Tunisia is limited. The main centre is the Institut National de Recherche Agronomique, Tunis (INRAT). In addition, there are a number of small, specialised research centres such as the bioclimatology laboratory (INRAC) and the brackish water utilisation research centre (CRUESI). But these are inadequate to either provide the necessary information for the full development of the country's agriculture, or to provide the extension services with enough data to carry out their work effectively.

Training of agricultural workers, on the other hand, is far better organised (table 3.10).

Although a wide range of agricultural and rural activities are covered, there are two significant gaps: there are no training facilities for either arboriculture or irrigated farming. In addition to those institutes listed in table 3.10, each governorate has its own centres de formation professionelle which provide local facilities for job training in locally important agricultural activities. Unlike the Ecoles Supérieures, entrance to these is not dependent on successful completion of a

Table 3.10 Rural/Agricultural Training Institutes 1978

	No. of Students
Institut National Agronomique, Tunis	259
Institut Sylvo - Pastoral, Tabarka	36
Ecole Supérieure d'Economie et de Promotion Rural, Moghrane	146
Ecole Supérieure d'Horticulture, Chott Mariem	196
Ecole Supérieure d'Equipment Rural, Medjez El Bab	120
Ecole Supérieure d'Elevage, Mateur	57
Ecole Supérieure de Grandes Cultures, Le Kef	48
Ecole Supérieure de Pastoralisme, Medenine	31

Unpubl. Min. of Agriculture

secondary education.

3.3.6 State Agencies

Many of the problems relating to the organisation of the agricultural sector discussed above could be reduced, if not completely removed, within the existing agricultural framework already operating in Tunisia. In particular, the state offices such as the cereals office, the oil office and the livestock agency, are in an ideal position to improve credit, research, training and extension work and to implement subsidies and price policies. Indeed, the function of these agencies is defined as:-

- the organisation, supervision and improvement of crop production,
- the maintenance of an equilibrium between the supply and demand of products,
- the organisation and supervision of the marketing of products and
- the control of inputs to the sector.

The basis is thus already established and it would take little extra effort to build on the existing foundation in order to improve the services discussed above. Provided that liason

between each office and between the offices and the Ministry of Agriculture was efficiently co-ordinated, substantial improvements could be made to the agricultural organisational framework.

3.4 Agriculture in the National Economy

3.4.1 GDP

GDP growth rates in Tunisia are amongst the highest in Africa (average 7% p.a. 1973 - 1977). The relative contribution by agriculture, however, has not reflected this growth (table 3.11). Throughout the 1970s, the agricultural contribution to GDP has fallen from 24.4% in 1972 to 18.4% in 1977; yet it continues to make the second largest contribution after non-administrative services, despite the enormous fluctuations encountered annually in agricultural production. Although agriculture is obviously an important element in the national economy, its final realisable potential is finite. This indicates two points for the national government: firstly, a prime objective must be to achieve that full potential, and secondly, to develop other sectors to reduce the overall dependency on agriculture. To a certain extent, this latter point is being achieved with the development of tourism, manufacturing industry and oil exploitation, but considerable ground needs to be covered with regard to the former. The V National Development Plan called for the agricultural sector to achieve self-sufficiency by 1981 and for an overall 2.5% growth rate within the sector, contributing 6.8% to the growth of GDP 1977 - 81. The government therefore obviously realises the necessity to develop agriculture, but in view of performances 1972 - 1977, it is unlikely that the optimistic targets for 1981 will be achieved.

3.4.2 Employment

The importance of agriculture in the national economy

Table 3.11 GDP at Factor Cost 1972 - 1977 (1972 prices)

	1972		1973		1974		1975		1976		1977	
	MD	%	MD	%	MD	%	MD	%	MD	%	MD	%
Agriculture and Fishing	232.6	24.4	212.7	22.3	231.4	22.2	236.1	20.6	252.6	20.9	230.0	18.4
Mines, Energy and Water	69.1	7.3	71.2	7.5	80.1	7.7	82.8	7.2	72.8	6.0	79.8	6.4
Manufacturing Industry	98.7	10.3	98.2	10.3	110.9	10.6	116.6	10.2	128.8	10.7	134.2	10.7
Construction	64.6	6.8	68.4	7.1	71.3	6.8	85.5	7.5	95.1	7.9	105.1	8.4
Services non-admin	367.8	36.6	374.0	39.2	402.2	38.6	468.4	40.9	488.2	40.5	507.2	40.6
admin	120.2	12.6	128.2	13.5	147.3	14.1	155.7	13.6	168.5	14.0	191.7	15.4
GDP at Factor Cost	953	100	952.8	100	1043.2	100	1145.1	100	1206	100	1248	100

Source: Annuaire Statistique vol. 23

is also reflected in the employment statistics (table 3.12). Agriculture supports a large proportion of the population; 39% of the total workforce (41.87% males and 27.22% females) work directly in agriculture, and a further 14.7% work in industry utilising agricultural products. This 39% must be compared unfavourably with the 20% of GDP contributed by the agricultural sector.

3.4.3 External Trade

Despite limited statistics published on Tunisian external trade, a number of inferences may be drawn from those which are available (table 3.13). Overall, agricultural goods are declining in importance as a component of Tunisian external trade. Agricultural imports have declined as a

Table 3.12 Employed Population 1975

Sector	Employed Population Masc.	%	Fem.	%	Total	%
Agriculture	439950	41.8	68690	27.2	508930	39.0
Mining	26210	2.5	420	0.2	26630	2.0
Manufacturing Industry						
- agric. products	70940	6.7	120820	47.7	191760	14.7
- other	41020	3.9	2380	1.0	43400	3.3
Electricity, Gas, Water	10960	1.0	520	0.2	11480	0.9
Construction	127290	12.1	1070	0.4	128360	9.8
Transport and Communication	53220	5.1	2800	1.1	56020	4.3
Banks and Insurance	115320	11.0	9020	3.6	124340	9.5
Services	165970	15.8	47360	18.7	213330	16.4
Non-déclarée	55060	-	7210	-	62270	-
Total	1105940	100	260580	100	1366520	100

Source: 1975 Census vol. 5.

Table 3.13 Tunisian Imports and Exports 1973 - 1978 ('000 Dinars)

IMPORTS

	1973		1974		1975		1976		1977		1978	
	Dinars	%	Dinars	%	Dinars	%	Dinars	%	Dinars	%	Dinars	%
Foodstuffs	48011	18	89942	18.4	90473	15.8	80952	12.3	92847	11.9	105547	11.7
Energy goods	18228	6.8	56872	11.6	50302	9.8	73026	11.1	85139	10.9	94168	10.5
Products with animal/vegetable base	20576	7.7	37439	7.7	30295	5.3	33440	5.1	41649	5.3	41736	4.6
Products with mineral base	1893	0.7	15555	3.2	10284	1.8	14162	2.2	14182	1.8	12283	1.4
Other Demi-products	61085	23	113359	23.2	124948	21.8	141634	21.6	180942	23.1	190793	21.2
Agricultural equip.	6455	2.4	8447	1.7	11582	2.0	1.530	1.6	10376	1.3	10518	1.2
Industrial Equip.	73586	27.7	103966	21.3	161241	28.1	199025	30.3	221158	28.3	271511	30.2
Consumer Goods	36115	13.6	63077	12.9	87690	15.3	103938	15.8	136173	17.4	173173	19.2
Total	265947	100	488658	100	572815	100	656718	100	782466	100	899730	100

EXPORTS

	Dinars	%	Dinars	%	Dinars	%	Dinars	%	Dinars	%	Dinars	%
Foodstuffs	52740	31.3	94402	23.7	63444	18.4	65379	19.3	57308	14.4	71470	15.4
Energy goods	53632	31.8	142741	35.9	150602	43.7	143215	42.3	166744	41.9	180267	38.4
Products with animal/vegetable base	7017	4.2	11013	2.8	7791	2.3	7784	2.3	10817	2.7	11364	2.4
Products with mineral base	15646	9.3	53240	13.4	51527	14.9	30149	8.9	25213	6.3	21214	4.5
Other Demi-products	30713	18.2	71216	17.9	40165	11.6	42880	12.7	53581	13.4	64051	13.7
Agricultural equip.	10	0.006	3	-	6	-	2	-	7	-	9	-
Industrial Equip.	762	0.5	1932	0.5	2860	0.8	4114	1.2	4697	1.2	12611	2.7
Consumer Goods	8115	4.8	23147	5.8	29185	8.4	44739	13.2	79879	20.0	107432	22.9
Total	168635	100	397695	100	345580	100	338262	100	298246	100	468417	100

Source: Annuaire Statistique vol. 24

proportion of total imports from 28.1% 1973 to 17.5% 1978 (table 3.14). However, it is important to note that the value of agricultural imports (which include substantial food-aid donations, particularly from the USA) have almost doubled in value over the same period. The country has therefore become heavily dependent on agricultural imports, in particular wheat, sugar and soybean oil.

Yet despite the increasing cost of agricultural imports, the money earned from exports has remained fairly constant (59MD 1973, 60MD 1978). The proportion of agricultural exports relative to total exports has, however, declined (35% to 17% over the 6 year period). As a result, the Tunisian agricultural trade deficit has increased over sixfold between 1973 and 1978. One of the major difficulties is Tunisia's dependence on a limited number of agricultural goods for export, in particular olive oil, fresh fruit and wine. Each of these products is highly vulnerable to competition on the world market, particularly as the main market is the EEC which, in order to protect its own producers, imposes strict tariffs on imports from countries such as Tunisia. Although Tunisia does have an Association Agreement with the EEC (signed 28 March 1969), reinforced by a Co-operation Agreement (25 April 1976), preferential treatment is naturally given to full-member producers.

The vulnerability of Tunisian exports is illustrated by the case of olive oil. Although attempts are made to maintain constant quantities for export through the import of soybean oil to mix with olive oil for domestic consumption, in 1974 Tunisia exported 90 000 tonnes of olive oil for 70MTD; in 1975 this was reduced to 45000 tonnes for 31MTD. Similarly, other fruits are susceptible to market fluctuations. In 1976,

Table 3.14 Agricultural Component in Tunisian External Trade 1973 - 1978

	1973	1974	1975	1976	1977	1978
Imports: 000D	75042	135828	132350	124932	144872	157801
% total value	28.1	27.8	23.1	16.1	18.5	17.5
Exports: 000D	59767	105418	71241	73165	68132	60115
% total value	35.5	26.5	20.7	21.6	17.1	17.6
Balance: 000D	-15275	-30410	-61109	-51767	-76740	-97686
% total balance	15.7	33.4	26.9	16.2	20.0	22.6

Source: Annuaire Statistique vol. 24

for example, 971 000 TD of almonds were exported. This compares with almond exports totalling over 3.2 MTD in 1971.

In the light of the above difficulties, there is an urgent need for Tunisia to diversify its agricultural exports, search for new markets and attempt to reduce imports through the development and improvement of domestic production (Anon. 1978 a).

3.4.4 Aid

In order to finance the large trade deficit, Tunisia relies heavily on foreign aid. This comes from a variety of sources, including the UN, World Bank, USA, Germany, France, Italy and Kuwait. A substantial proportion of this is given for agricultural projects. UNDP assistance to Tunisia 1973 - 76 amounted to $15m; 50% of this was given for agricultural developments. Although planned assistance 1977 - 81 had dropped to $10m, again 50% was allocated for agriculture (UNDP 1977). The following headlines from the Middle East Economic Digest also give an indication of the kind of agricultural aid given to Tunisia; 'World Bank loan of $24m for 15 year rural development programme in the NW' (No. 22, 1981); 'Tunisia gets a $15.8m loan from the USA to help pay for emergency food supplies' (No. 17, 1980); 'World Bank approves a $30m loan to help finance farm credit and small-scale agro-business investment' (No. 28, 1980).

Although ready aid such as this has obvious advantages, there is a danger that an over-dependence on aid can develop (Stevens 1979). Tunisia is approaching this stage. With aid as easily available as it is in Tunisia, much of the incentive to motivate development planners and farmers alike is reduced. In March 1981, USAID announced that they were not going to finance any further agricultural schemes in Tunisia, primarily

because the country no longer meets poverty criteria (MEED No. 11, 1981). Should this trend continue (and evidence suggests that it will - eg UNDP assistance, UNDP 1979), Tunisia will be forced to reduce her reliance on foreign aid and hopefully development incentives will increase.

3.4.5 National Plans

State involvement in the agricultural sector (as in all other sectors of the economy) is planned and co-ordinated within the framework of the National Plans. These have been utilised as a tool for economic planning in Tunisia since 1961 and the introduction of the Plan Décennal. Economic planning during the 1960s was heavily influenced by the co-operative movement and has been documented elsewhere (Daves & Van Wersch 1976, Nouira 1971, Rivière 1979). Efforts of this decade are best summarised in the following statement:

> 'the decade 1960 - 1970 is characterised on the one hand by the huge effort made by the nation to promote its economic development and, on the other, by the relative inadequacy of the results achieved'
>
> (Nouira 1971)

With the planning of the IV Development Plan (1973 - 76), Tunisia had moved away from the strongly socialist orientation of the 1960s to a philosophy based on a greater degree of economic liberalism. This continued into the V Plan (1977 - 81). In practical terms this entailed a greater degree of private enterprise operating in the economy, but with a continuing strong state sector.

For the agricultural sector, the principal objectives defined for the period of the V Plan hinge on the intention to achieve 'l'auto-suffisance alimentaire matérialisée par l'équilibre de la balance commerciale des produits alimentaires'

(V Plan, p.207) by 1981. In quantitative terms this was seen as:

- an increase in agricultural production (by volume) of 4.4% p.a., compared with 2% for the IV Plan;
- an increase in the value added by the agricultural sector of 2.5% p.a., compared with 1.5% p.a. during the IV Plan;
- the realisation of a total investment in the agricultural sector of 500 MD (at current prices), as compared to 197 MD 1973 - 76;
- the creation of 30000 permanent jobs in agriculture.

Although many difficulties have been eased in the agricultural sector during the 1970s, a planned increase in agricultural production of 4.4% p.a. 1977 - 81 is optimistic when compared with the actual growth rate of 2% p.a. 1973 - 76. Similarly, it is unlikely that agricultural value added will increase by 1% compared with rates during the IV Plan.

During the 1960s, agriculture received priority in economic planning; during the 1970s, the emphasis has shifted to manufacturing industry, with the government becoming obsessed with the creation of jobs. This has obviously worked to the disadvantage of the agricultural sector, where employment potential has an inherent maximum. Consequently, the creation of 30000 new jobs in agriculture may prove over-optimistic.

The key to agricultural development will naturally lie in the resources, in particular financial, devoted to the sector (table 3.15). Although the amount of investment allocated to the agricultural sector has increased substantially in real terms (196.8 MD IV Plan, 500 MD V Plan) the proportion of total investment has declined slightly (12.5% to 12.0%). However, it must be remembered that some investment in the water and manufacturing industry sectors will also help

Table 3.15 Sectoral Breakdown of Investment IV and V Development Plans.

	IV Plan		V Plan	
	MD	%	MD	%
Agriculture and Fishing	196.8	12.5	500	12.0
Mines	41.4	2.6	130	3.0
Energy	259.5	16.4	732	17.4
Water	53.0	3.4	173	4.1
Manufacturing Industry	284.3	18.0	950	22.6
Construction	23.0	1.5	50	1.2
Transport	261.3	16.5	570	13.6
Housing	230.1	14.5	600	14.3
Tourism	55.2	3.5	95	2.3
Diverse Services	8.0	0.5	24	0.5
Collective Equipment	166.4	10.6	376	9.0
Total	1579.0	100	4200	100

Source: V Plan, p.79.

stimulate agricultural development. Nevertheless, a sector which accounts for 20% of GDP and 40% of the national labour force could reasonably expect a greater proportion of national investment.

Closer investigation reveals further anomalies (table 3.16). Whereas during the IV Plan agricultural investment was almost equally divided between irrigated agriculture (22.8%), material for agriculture including seeds and fertiliser (28.9%), arboriculture (12.7%) and livestock husbandry (11.7%), representing a reasonably balanced approach to the development of the sector, agricultural investment during the V Plan is dominated by irrigated farming (nearly half of the total 500 MD allocated to agriculture). Although it is recognised that irrigated agriculture offers the greatest scope for the intensification of agricultural production, it is

Table 3.16 National Agricultural Investment IV and V Plans

	IV Plan		V Plan	
	MD	%	MD	%
Irrigated agriculture	45	22.8	244	48.8
Agricultural material	57	28.9	80	16.0
Livestock	23	11.7	56	11.2
Fishing	19	9.6	46	9.2
Arboriculture	25	12.7	35	7.0
Forests	15	7.6	27	5.4
Other	13	6.6	12	2.4
Total	197	100	500	100

Source: V Plan, p.210.

felt that the sector has been given excessive resources. Also unreasonable is the disconcertingly high proportion of agricultural investment allocated to unproductive administration (table 3.17). During the IV Plan, 30% of total agricultural investment went on administration; by the V Plan this had increased four-fold in real terms to 239MD (48% of total). Most of the money for agricultural investment in the IV and V Plans was to come from the state sector (54% and 60% respectively). The private sector, faced with better investment returns in manufacturing industry and tourist developments, was expected to contribute only 30%; the balance being met by foreign aid.

Table 3.17 Public, Private and Administrative Investment in Agriculture. IV and V Plans

	IV Plan		V Plan	
	MD	%	MD	%
Administration	60	30	239	48
Public enterprise	26	13	92	18
Private enterprise	111	57	169	34
Total	197	100	500	100

Source: V Plan, p.211.

It is thus apparent that government investment in Tunisian agriculture is both inadequate and misdirected if the objectives of the national development plans are to be achieved. In the first place, direct investment within the agricultural sector requires balancing; at present there is over-emphasis on irrigated agriculture to the detriment of other sectors. Secondly, as Tunisia experiences a serious food deficit, a reorientation of investment toward agro - industrial enterprises could help this (Anon. 1978b; Sethom 1966). Not only would this enable Tunisia to reduce foreign imports, but would also facilitate agro-industrial integration. At present, the Tunisian economy is very polarised, with little co-operation between the agricultural and industrial sectors. The importance of manufacturing industry in Tunisia is rapidly increasing; agriculture will always be important. Until now the two sectors have been planned and developed separately, yet there is considerable scope for their integration, which would provide a more secure foundation for the economy, create more jobs and assist with the balance of payments deficit.

Investment for agro-industries was catered for in both the IV and V Development Plans (table 3.18). However, it will be noted that the proportion of the total manufacturing industry investment has declined from 20.8% to under 14%. Despite this, 9600 new jobs are anticipated 1977 - 81 compared with 6750 new jobs during the IV Plan.

Table 3.18 Planned Development in Agro-Industries IV and V Development Plans

	IV Plan	V Plan
Investment (MD)	59.2	130
Percentage of Total Manufacturing Industry Investment	20.8	13.7
New Employment	6750	9600
Production Increase	2.3	3.4

Source: V Plan, p.81.

A preliminary study undertaken by the FAO/World Bank Co-operative Programme is critical of developments in this sector and highlights a number of specific areas where potential for improvement exists:

i) there is an urgent need for grain storage rehabilitation, conversion to bulk and expansion;

ii) cold-storage facilities require expansion;

iii) packaging materials - expansion and diversification of this sub-sector would lead to higher sales, mostly by export, by improving conservation and presentation of Tunisian products;

iv) the processing of livestock products (meat, milk, eggs etc.) is in rapid expansion. At present the sub-sector is based on large plants located in the coastal regions of Tunisia. There is a need for smaller-scale developments in the interior of the country, nearer the extensive grazing lands of the Centre;

v) expansion and/or renewal and modernisation of olive oil mills and the installation of solvent extraction units for olive cakes is needed;

vi) in the face of expansion of fresh fruit and vegetable production, there is scope for development of grading, packing, storing, drying, canning and processing plants. However, such developments must be carried out with care, bearing in mind fragile overseas markets. (Grace and Mortier 1979).

There are, therefore, substantial areas for improvement and development in this sector which could play an important role in the Tunisian economy. If such developments are to be carried out though, a revision of investment priorities is required.

3.5 National Spatial Structure

Regional disparities are one of the fundamental problems

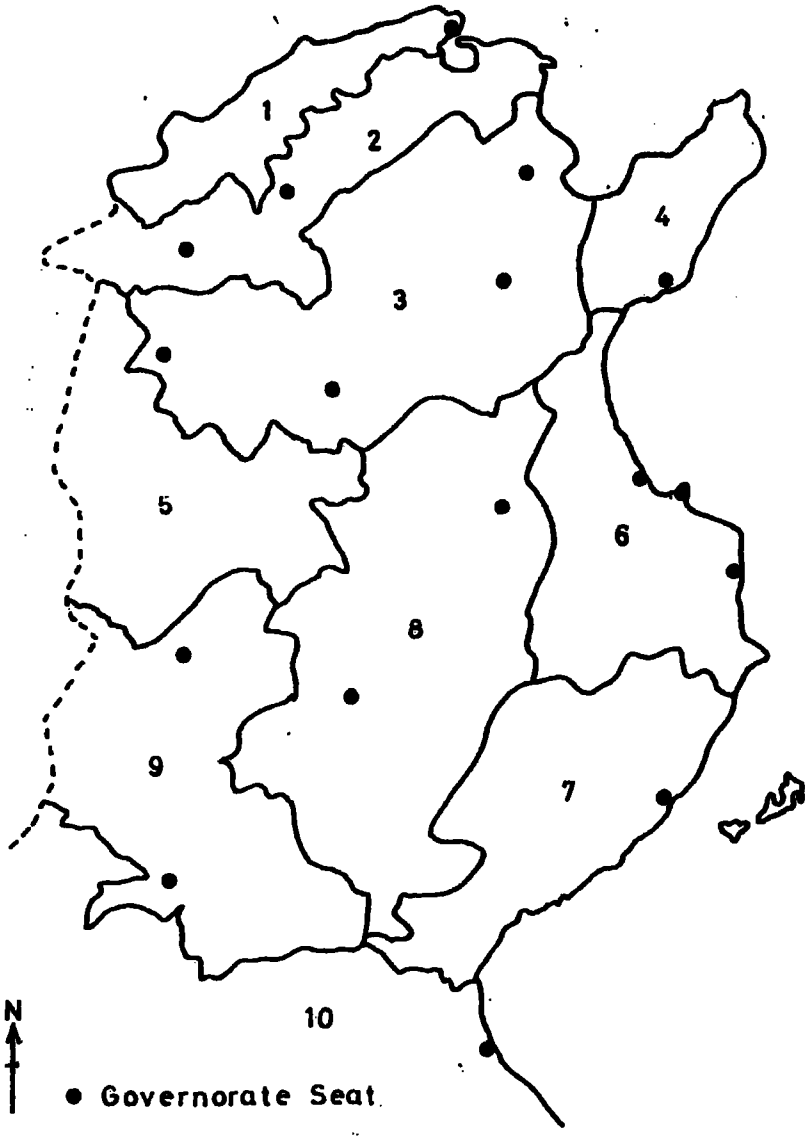
facing development of rural Tunisia. Simply, the country can be divided into a relatively wealthy coastal area, and a comparatively poor interior, although there are obviously variations on this general pattern.

Physical variations were examined in section 3.2.1. Inevitably, variations in the natural resource base are reflected in agricultural activity. From these, Tunisia can be divided into ten homogenous agricultural zones (Polman 1978,Thio 1979); these are presented in figure 3.4. Brief characteristics of each zone are noted with the map, but the basic regional variations can be summarised as an agriculturally wealthy area in northern Tunisia (zones 2 and 3), plus three zones of relative affluence, including Cap Bon and the Sahel (zones 4, 6 and 7). The mountainous areas (zones 1 and 5), are extremely poor for agriculture, with climate, soil quality and physical relief making the terrain inhospitable to any substantial agricultural activity. The Steppe lands (zones 8 and 9), whilst highly suitable for extensive grazing and limited cereal and alfa production, do not support large populations. Finally, in southern Tunisia (zone 10), significant agriculture is found only in the regions of the oases; elsewhere desert lands dominate.

Primarily as a result of physical factors, Tunisia's population has always clustered around the coast, particularly in the areas of Tunis, Cap Bon and the Sahel. Over 50% of the country's population is resident in the seven coastal governorates which occupy just 14.3% of the total land area (figure 3.5). Given this population distribution, it is inevitable that much of the national services and investment are concentrated in the littoral regions. However, it does appear that there is a disproportionate bias to these areas. For example, it has been noted that over 97% of the investment

Fig 3.4

AGRICULTURAL LAND USE ZONES



1 Forest, poor grazing, land parcellation. Population amongst the poorest in Tunisia. In winter the land is virtually inaccessible.

2 Best agricultural zone in Tunisia. Good climate, good soils, a wide range of crops are possible.

3 Most important area in terms of cultivable area, but not as good agriculturally as zone 2. Dominated the Medjerda Valley.

4 Cap Bon - olives, fruit trees, vines. A long history of fertile agriculture. Many small settlements.

5 Hauts Plateaux - low rainfall, relatively low temperatures and correspondingly low yields.

6, 7 Sahel of Sousse and Sfax. Dominated by olive cultivation. High population in many small villages.

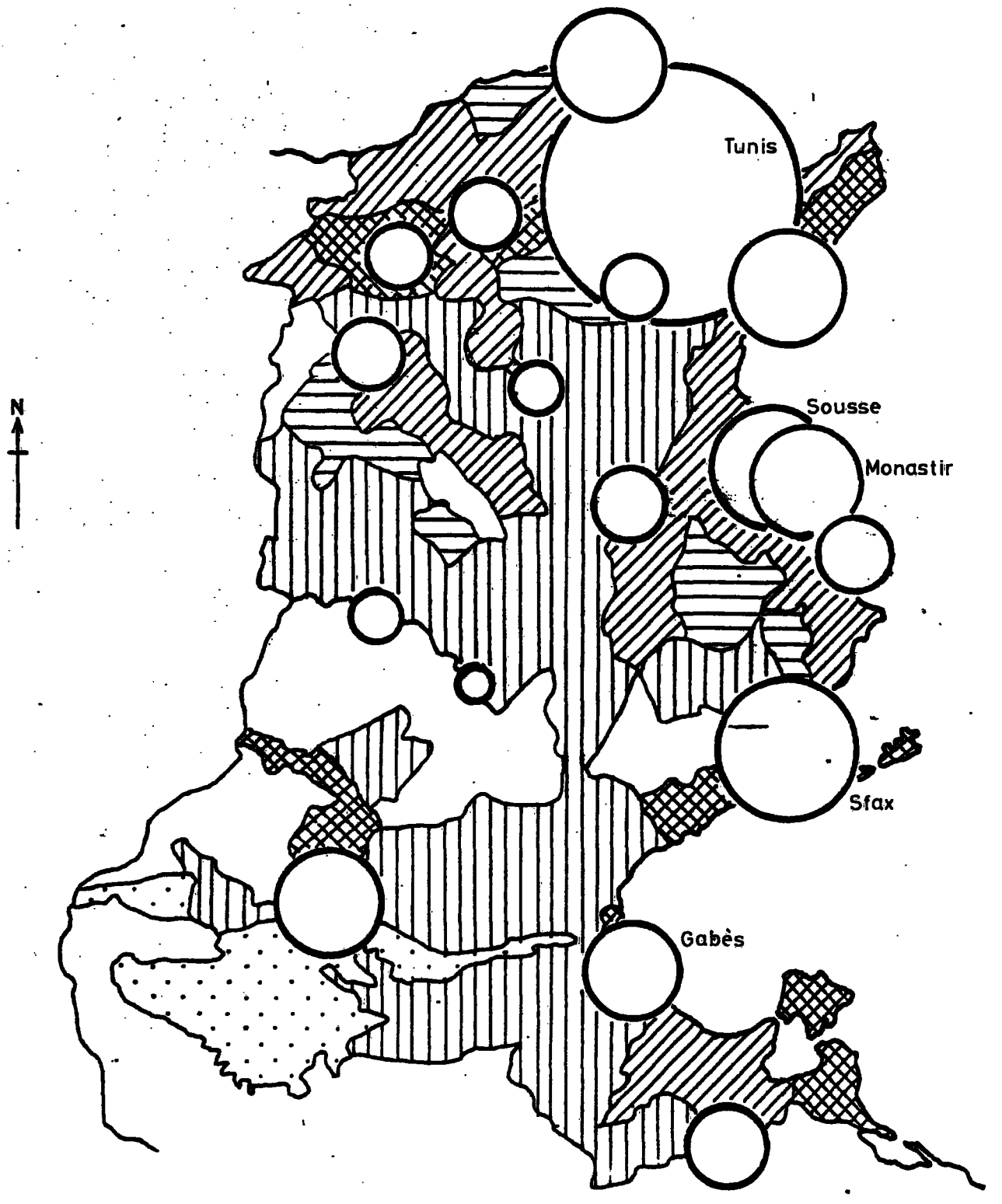
8 Steppe Lands - extensive grazing. Inland drainage dominates leading to frequent flooding.

9 Alfa Steppes - low density population, erosion problems as in zone 8.

10 Oasis and desert country.

Source: THIO 1979 p 93

Fig 3.5 POPULATION DENSITY



No of inhabitants / km²

100

50

40

30

Chott

Major urban settlements

0 50 150 250 400

'000 people

Source: 1975 Census

realised under the auspices of the 1972 Export Industry Law has been made in the coastal areas of Tunisia; and over 93% of that made under the 1974 Investment Law in the same zone (table 3.19). Such biased developments are not conducive to the overall progression of the Tunisian economy.

Table 3.19 Regional Division of Realised Investment and Employment 1972 and 1974 Laws

	1972 Law		1974 Law	
	Employment %	Investment %	Employment %	Investment %
Tunis	30.62	18.56	44.4	41.84
NE (excluding Tunis)	18.51	9.32	12.16	12.63
Sahel	36.97	29.32	18.39	16.62
South Littoral	6.04	39.94	16.71	22.58
Total Littoral	92.14	97.14	91.66	93.67
Tunisia Interior	7.86	2.86	8.34	6.33
Total Tunisia	100	100	100	100

Source: Signoles 1978

The problems of spatial disequilibrium have been recognised by the Tunisian government. Spatial planning in Tunisia dates from the 1960s, the first time a spatial planning office was established being 1961. The office started with ambitious plans but suffered from a lack of experienced technicians, statistics and documentation (Dlala 1978). Initially, this office was primarily concerned with towns, but with the increase in tourism, the Direction de l'Aménagement de Territoire (DAT) was annexed to the Ministry of Tourism. The first brief of the DAT was to:

i) develop a policy of balanced development for the different regions of Tunisia;

ii) preserve existing areas of economic activity through the preservation of infrastructure;

iii) to organise and manage urban space;

iv) establish land resources.

In 1971 the DAT was transferred to the National Economic Ministry, becoming responsible for the implication of national economic plans on the spatial structure of the country. Since 1971, the DAT has moved again to the Ministère de l' Equipement, but continues to operate on a similar basis to its time with the Economic Planning Ministry.

Yet despite an established organisation to contend with the problems of spatial planning, attempts to redress the regional disparities in Tunisia have been weak and predominantly urban-oriented. Although attempts have been made to encourage industrial decentralisation away from Tunis (Groupe Huit /DAT 1976), the decentralisation appears only to have gone as far as the towns of other coastal regions.

However, small rural towns could play a key role in promoting the development of the Tunisian interior (Hopkins 1979, Trabelsi 1978, 1979). They could act as sub-regional growth centres, providing a focus for local investment which, if properly directed, could act as a stimulant to the economy of the less-favoured regions of Tunisia.

Spatial planning in Tunisia, though, lacks sufficient energy. 'Les interventions, bien que diverses, sont timides, limitées, éparpillées et manquent de co-ordination' (Dlala 1978, p.111). Until this changes, regional disparities in Tunisia will continue and probably widen. At present the country is experiencing a marked urban bias. Yet the resources and the political environment exist to introduce a greater degree

of equilibrium to the spatial economy. Less money needs spending on the production of glossy reports and more on the implementation of their recommendations.

3.6 Rural Demography

Having examined economic aspects of the rural problem, an investigation of the human elements of the situation is required. In addition to pure demographic factors, a wide range of difficulties exist in the rural sector, including housing problems, education and problems associated with social change, but fundamental to them all are the problems associated with rural demography.

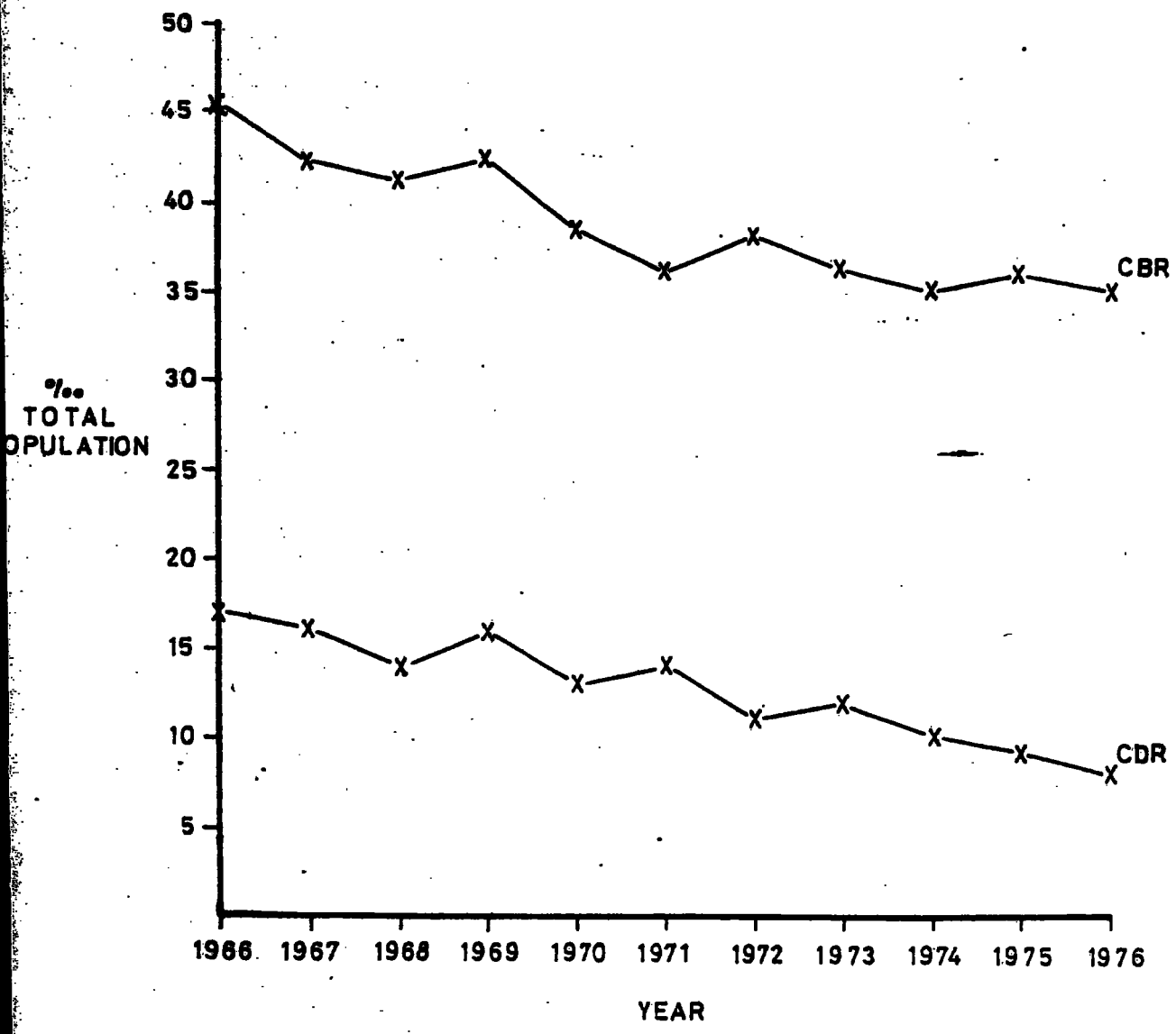
3.6.1 Crude Birth and Death Rates

The Tunisian population as a whole is rapidly increasing; the average growth rate 1936 - 46 was 1.9% p.a., but by the 1970s this had increased to 2.5% p.a. (average 1972 - 78), resulting in an increase in the total population from just over two million in 1926 to approaching 6 million in 1975 (Census 1975 vol. III). The pattern of increase shows little sign of diminishing, despite attempts to control it. The growth of the Tunisian population is due to a number of factors, but particularly to a decline in the national crude death rate (CDR) which has fallen from 27‰ in 1946 to 8.7‰ in 1976 (Cohen-Hadria 1975). Other contributory factors have been the declining birth rate (not as dramatic as that of the crude death rate), changes in the population structure and migration (figure 3.6). Inevitably, rates of change vary throughout Tunisia; in particular, differences can be noted between urban and rural areas.

Regional variation in the crude death rate follows a predictable pattern (table 3.20). Tunis governorate, with all the facilities and advantages of a capital, primate town, has

Fig 3.6

TUNISIAN CRUDE BIRTH AND DEATH RATES 1966 - 1976



Source: INS Annuaire Statistique vol 23

by far the lowest CDR (6.81‰). Similarly, other predominantly urban governorates have low CDRs (eg Monastir 7.53‰, Sfax 7.38‰). In contrast, the predominantly rural governorates of the Centre and South have noticeably higher CDRs (Kairouan 12.2‰, Kasserine 11.12‰, and Gabès 10.52‰).

Table 3.20 Crude Birth and Death Rates

1976 (‰)

Governorate	CBR	CDR
Tunis	30.16	6.81
Zaghouan	36.89	7.87
Bizerte	33.49	9.37
Beja	32.54	8.41
Jendouba	33.91	8.41
Le Kef	32.51	8.47
Siliana	37.33	8.47
Kasserine	43.47	11.12
Sidi Bou Zid	44.29	9.59
Gafsa	42.58	9.21
Medenine	44.63	9.73
Gabès	40.12	10.52
Sfax	33.19	7.38
Kairouan	42.74	12.22
Mahdia	35.67	8.66
Monastir	34.48	7.53
Sousse	37.22	9.22
Nabeul	34.83	8.20
National	36.14	8.69

Source: INS Annuaire Statistique vol. 23, p.48.

Variations in national CBR conform to a similar pattern. Urban governorates in general experience lower than average rates, whilst the rural governorates have rates higher than the

average. Again, Tunis governorate has the lowest rate (30.16‰) with the central and southern governorates experiencing the highest rates (Medenine 44.63‰, Sidi Bou Zid 44.29‰ and Kasserine 43.67‰). Reasons accounting for the national decline in the CBR relate to three factors: social change - including a rise in the marriage age and associated changes in fertility; structural factors (changes in the age structure); and the introduction of a family planning programme (Lapham 1970). It is because each of these have affected each region differently that differential CBRs have resulted.

Change in the Tunisian social structure since independence has been very marked, and in many ways inevitable owing to legislation such as the Code of Personal Status 1956. Aspects of changes in the social structure relevant to a changing CBR are changes in the role of women, the marriage age and in the family structure.

The raising of the minimum age of marriage (to 17 for girls and 20 for boys) has reduced fertility, as the potential reproductive period of a woman has been reduced. However, differential employment and education opportunities for women between urban and rural areas have meant that female marriage ages tend to be lower in rural areas than in towns.

Now that women have been given equal status to men, their role in society has become more pronounced. Although women have not yet realised the full potential of their new legal status, there have still been marked changes. Women are not as subjugated as they once were, and women are no longer expected to remain in the home. Socialising amongst women has increased and in certain areas women are able to take full advantage of job opportunities (Durrani 1975, Hawker 1976). There are, however, pronounced differences in these phenomena between urban and rural areas. Studies

undertaken in the Sahel have shown rural women to be reluctant to adopt changes, and that their role continues very much along traditional lines (Abu - Zahra 1972, Nassif 1978), whereas change amongst women in urban societies has progressed by a greater degree (Hawker 1976).

3.6.2 Family Planning

Another component of social change has been the national family planning programme. Initiated in 1964, it gained full momentum ten years later with the creation of the Office National du Planning Familial et de la Population (ONPFP). Although family planning methods were utilised in Tunisia prior to 1974, it was not until after this date that they began to have a significant affect on the CBR (Cohen - Hadria 1976). With the creation of the ONPFP and the legalisation of abortion at the same time, there has been a marked improvement in results (table 3.21).

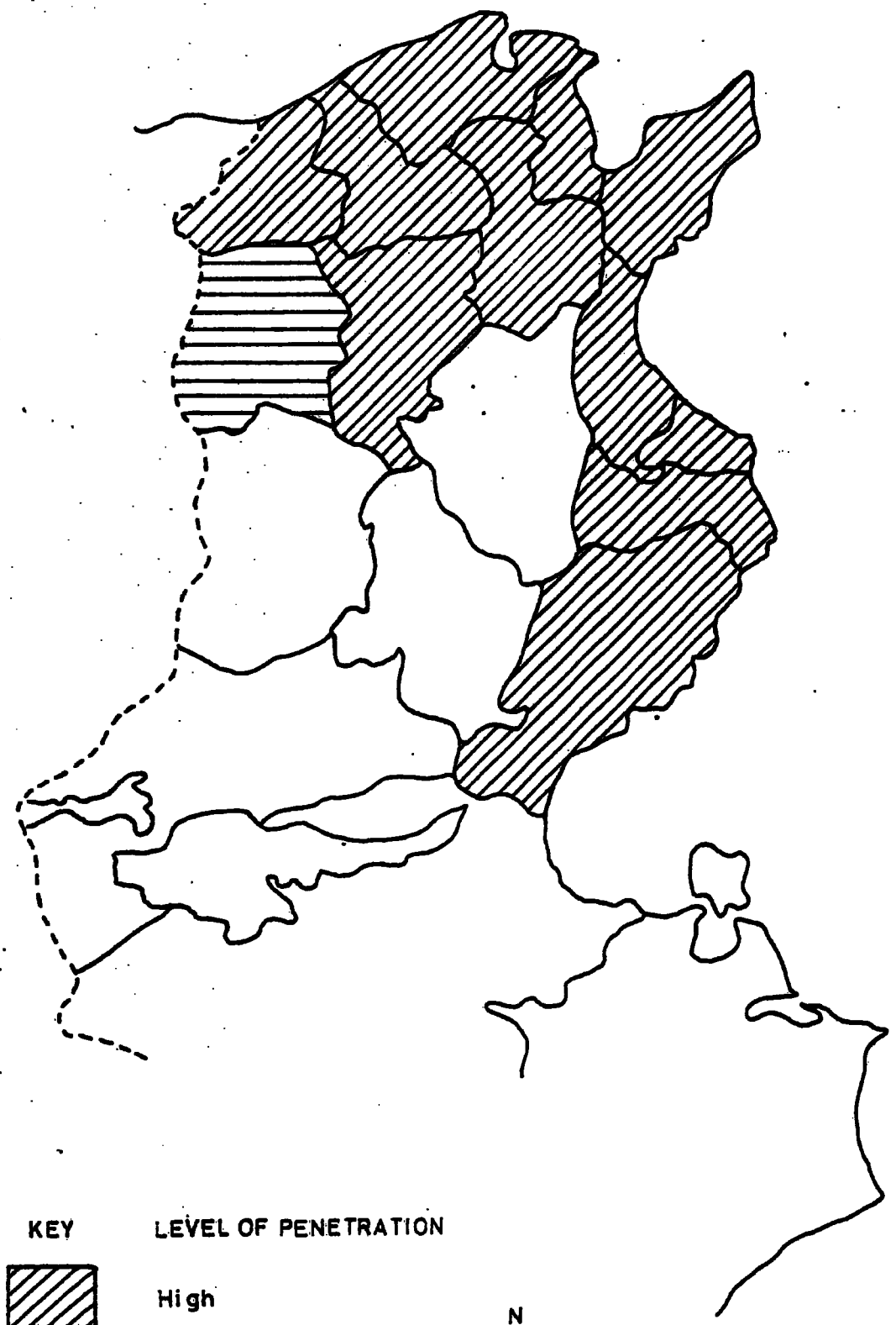
Table 3.21 Tunisian Family Planning Indicators

	1966	1974	1975	1976	1977	1978
Total visits	-	302015	351322	429891	500957	527501
Total number of contraceptives	41517	256984	289973	346351	397834	397682
IUD	12077	19084	17307	20830	23879	26273
Pill	350	10795	16310	25987	27567	27017
Sterilisation	766	10757	9896	8269	7987	8832
Social Abortion	1326	12427	16000	20341	21162	20999
Estimated number of avoided births	n.a.	23117	29720	35578	44508	48663

Source: ONPFP 1979, pp 21 - 22.

Fig 3.7

LEVEL OF PENETRATION OF TUNISIAN FAMILY PLANNING SERVICES



Source: ONPFP 1977

By 1978, it was estimated that almost 50000 births a year were being avoided due to the family planning programme.

The establishment of the ONPFP led to a more comprehensive approach to family planning. It was based on the spread of information, and in recognition of the difficulties inherent to this emphasis, particularly in rural areas, a special rural programme was instigated, comprising:

i) the inclusion in lycées agricoles of matters relating to population and family planning;

ii) secondary school teacher-training in matters of family planning;

iii) special education programmes in rural areas (Cohen - Hadria 1976).

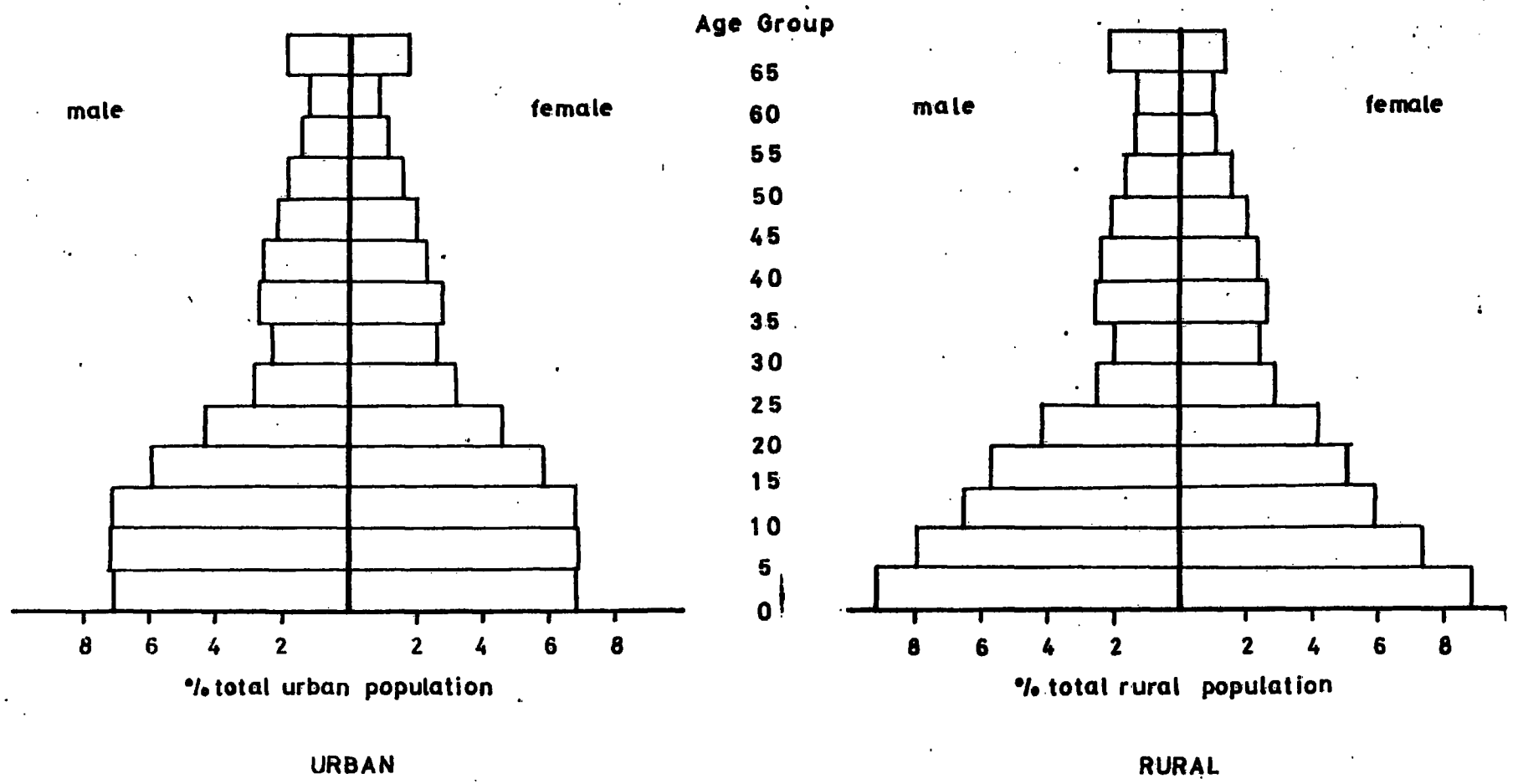
However, as illustrated in figure 3.7, penetration rates of the family planning programme to rural areas are lower than for urban areas. In rural areas of the Sahel it has been shown that those tending to adopt family planning techniques most readily share one or more of the following characteristics: active participation in the PSD, educated, westernised and economically secure, relatively young and mobile and living away from the extended family (Brown 1981). Yet such people represent the minority in Tunisian rural society. Attempts to spread family planning must be oriented toward the remaining majority of rural society, for it is within this sector that the highest CBRs are found.

3.6.3 Population Structure

The final element affecting the CBR is the population structure. Nationally, Tunisia has a broad-based population pyramid characteristic of many developing countries. Over 30% of the total population is less than 10 years old; 43.8% less than 15, and over 55% under 20 years old. There

Fig 3.8

AGE STRUCTURE OF URBAN AND RURAL POPULATIONS 1975



Source: 1975 Census

are, however, significant differences in the population structure between urban and rural sectors (figure 3.8). Indentation in the 25 to 35 year old age group common to both sectors is a result of the Second World War. However it will be noted that there is a slight decline in the urban CBR, reflected in the slight narrowing of the pyramid. In contrast, the population structure of the rural sector has an extremely broad base; over 56% of the rural population is under 20, compared with just over 50% for the urban population. Thus, whereas it appears that growth of the urban population is stabilising, that of the rural population is continuing to increase; it is, therefore, the rural sector to which greatest efforts to reduce population growth should be directed.

3.6.4 Migration

Natural changes in the Tunisian population attributable to birth and death rates are modified by migration (table 3.22). Effects of international migration from Tunisia have been highly variable during the 1970s, due to fluctuations in the political relations between Tunisia and countries attracting Tunisian migrants, particularly Libya and France. International migration is, however, an important component of population distribution and has effects on domestic labour markets. It would appear that the majority of international migrants, by the latter half of the 1970s, were tending to come from the interior rural governorates, particularly Sidi Bou Zid, Kasserine and Gafsa (Findlay 1978a).

Table 3.22 Migration and the Natural Rate of Population Increase Tunisia 1973 - 1978 (%.)

	1973	1974	1975	1976	1977	1978
Natural Increase	25.5	25.6	26.7	27.5	28.1	26.2
Migration	-2.9	-	+1.0	+2.2	-4.7	-0.4
Total Change	22.6	25.6	27.7	29.7	23.4	25.8

Source: INS Annuaire Statistique, vol 24

Internal migration is also significant in Tunisia and this is characterised by four main features:

i) rural - urban migration does exist, but with considerable variation. Out - migration is greater from the North - West districts of Tunisia and from the South than from the pastoral steppe lands;

ii) the characteristics of Tunisian migration have changed over time; in 1966, 33% of migrants moved from rural to urban areas whereas, by 1975, this proportion had declined to 18%. Inter - urban migration increased to become the dominant form of population movement.

iii) a low 'efficiency' of migration movements. Between 1969 and 1975, migration efficiency was only 24%; most migration is balanced by counter-flows;

iv) Tunisian migration tends to be highly age and sex-selective; young males in the 20 - 29 group are the dominant form of migrants. (Findlay 1980).

Rural to urban migration in Tunisia is thus no longer a serious problem. However, it does appear that the selectivity of migration is such that it tends to be the young, best educated and most skilled men who tend to leave the rural areas (Hay 1974). Rural emigration therefore represents a loss of human capital.

In part, the loss of human capital is compensated by financial remittances sent back to the villages of origin. Part of this money is invested in small-scale projects at the village level, but many difficulties are associated with this and it would appear that the maximum potential of the situation is not being realised (Koelstra and Tieleman 1977). Also, it is apparent that the proportion of migrants actually sending money back to their home villages is declining (see

Chapter Seven).

3.7 Rural Society

3.7.1 Education

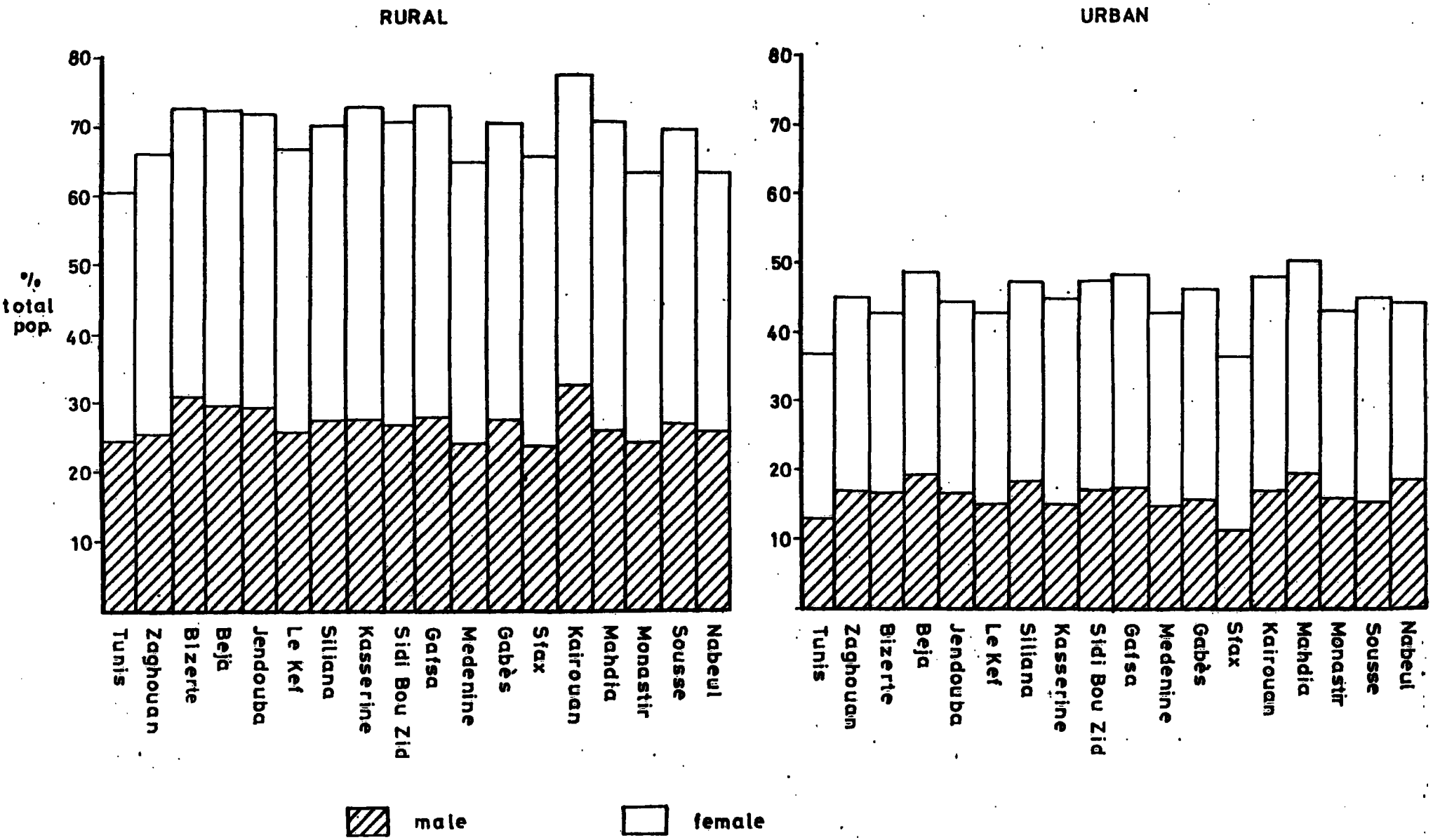
From independence, the Tunisian government has believed that 'a policy of horizontally broadened and vertically extended education is a fundamental precondition for the success of any plan for transforming the economic and social structure of the nation' (Allman 1979, p.63). In order to carry out this policy, substantial resources have been allocated to the development of Tunisian education services; on average, one third of the national budget has been spent on education.

But despite progress that has been made, Tunisian education has not developed as fully nor as comprehensively as might have been expected. Since 1972, resources allocated to education have decreased (34.5% of the national budget 1972, 30.5% 1974). The education system is becoming increasingly selective and 'bottom heavy' and in spite of changes that have been made, Tunisian education continues to suffer from inequalities. If anything, it is becoming increasingly biased to certain social, economic and geographical groups. (Zoughlami 1979).

Women and rural areas appear to be the groups most discriminated against. The Education Reform Act 1958 attempted to eliminate bias against these groups by establishing a network of primary schools in rural areas. By 1971, nearly 50% of Tunisian primary schools were without electricity and water, and 40% were without access roads and more than 10 KM from health, post and police facilities (Allman 1979). The government had thus made major attempts to spread primary education to isolated rural families. Success in a reduction of bias against women has not been as great. Whereas 50% of

Fig 3.9

ILLITERATE POPULATION AGED 10 YEARS OR OVER BY SEX, SECTOR AND GOVERNORATE 1975



Source: INS Annuaire Statistique vol 23

primary school pupils in the Tunis area are female, less than 30% are female in rural areas of the Centre and South.

Above primary level though, there is a strong bias against rural areas. Not only are secondary schools proportionally more numerous in urban areas than rural areas, but during the 1970s, selection of pupils for these schools has been increasingly oriented toward the social and economic groups that dominate the urban sector.

Regional and sex differentials in schooling are also reflected in literacy rates (figure 3.9). Illiteracy is far higher in the rural areas of Tunisia (69.33%) than in the urban areas (41.45%). Rates are particularly high in the rural interior governorates such as Kairouan (77%), Gafsa (72%) and Bizerte, Beja and Jendouba (71%). Regional differences are further emphasised by differences in female illiteracy rates. Nationally, female illiteracy is greater than that for men (67.8% compared with 42.7%), but in rural areas this differential is even greater (84% to 55%).

3.7.2 Employment

In 1975, of a total population of 5577250, 3229960 (58%) were aged 15 or over (population d'âge actif). This comprised 1621820 (29%) economically active people and 1576220 (28%) persons economically inactive.(1) A breakdown of economically active people by milieu is presented in table 3.23.

---

(1) Employment data is from the 1975 Census vol. 5
Economically active = those people with work or needing work
Economically inactive = those without work aged 15 or over, eg housewives, students, retired people etc.

Table 3.23 Economically Active Population by Sex and Milieu

Milieu	Active Population			
	Masc	Fem	Total	% Masc
Urban	650550	178370	828920	78.48
Rural	667760	125140	792900	84.22
Total	1318310	303510	1621820	81.29

Detailed patterns of employment structure were considered in section 3.4.2. Of greater relevance here are variations in unemployment - ie the proportion of people aged between 15 and 59. Of the total 1621820 economically active people in 1975, 255300 (15.7%) were recorded as 'sans emploi', of which 119120 (47%) were unemployed for the first time.

Rates of unemployment vary significantly between urban and rural areas and between governorates. Age and education levels are also related to unemployment (table 3.24).

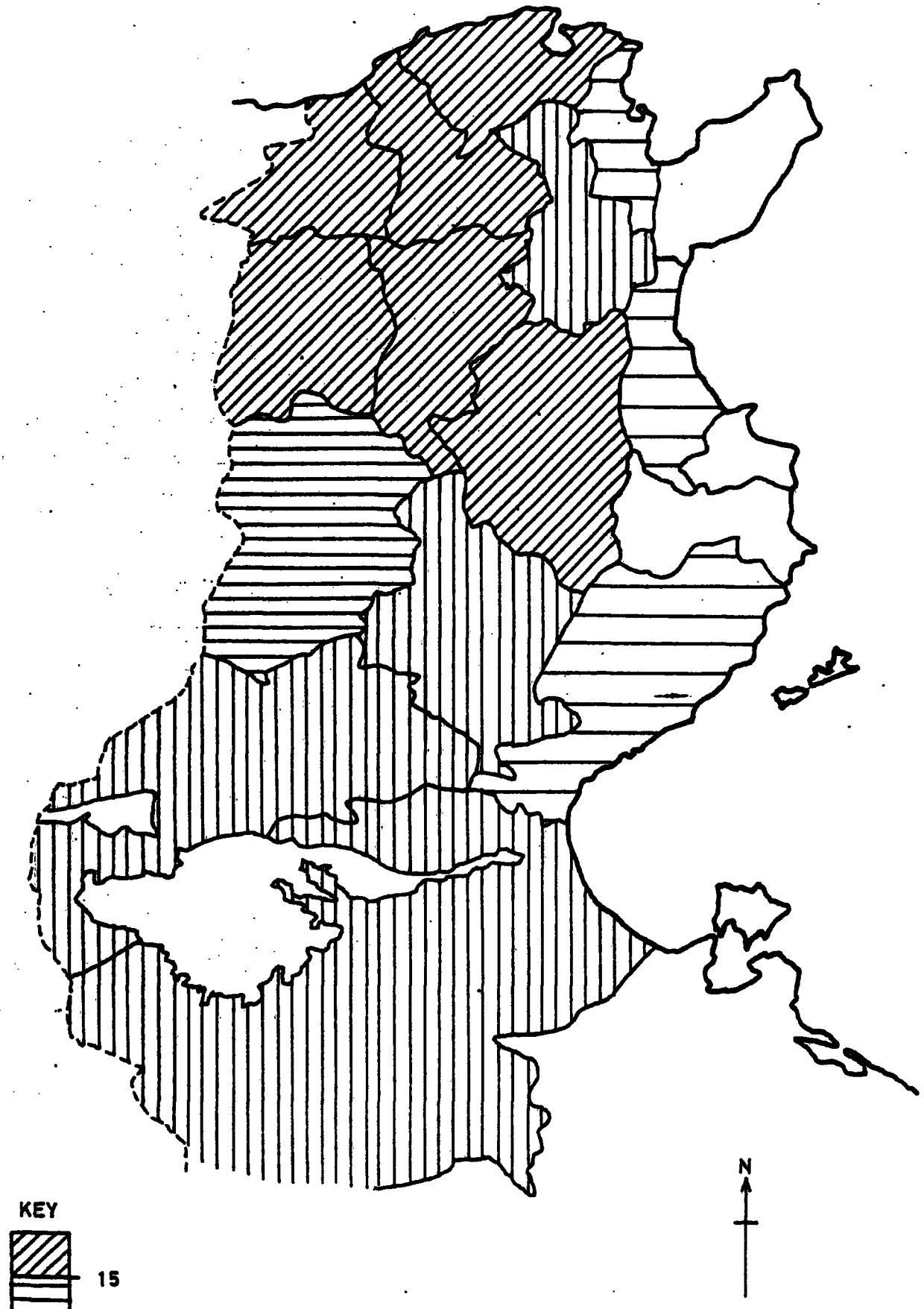
Table 3.24 Unemployment Rates by Sex and Milieu 1975 (%)

Sex	Urban	Rural	Total
Male	10.17	16.61	13.36
Female	11.32	9.61	10.62
Total	10.40	15.56	12.87

Rural unemployment is considerably higher than urban unemployment (15.56% and 10.4% respectively). The differential is even greater amongst the male population, which reflects both the lower availability of jobs in rural areas and the greater desire of urban women to find employment. Despite inter-sectoral difference, overall Tunisian unemployment is high, with a mean of 12.87%.

Urban/rural unemployment differentials are further emphasised in figure 3.10 which presents unemployment data by governorate. As with other social indicators, governorates

g 3.10 UNEMPLOYMENT RATES
BY GOVERNORATE 1975



Source: 1975 Census Data

Table 3.25 Unemployment by Age Group and Sex 1966 and 1975

%

Age Group	1966			1975		
	male	female	total	male	female	total
15 - 19	39.1	25.7	37.2	43.2	28.4	38.9
20 - 24	16.3	12.1	15.9	24.7	17.4	22.9
25 - 29	13.2	7.9	12.9	10.4	6.5	9.6
30 - 34	11.8	7.6	11.6	7.2	3.8	6.7
35 - 39	10.9	8.5	10.8	7.1	1.6	6.4
40 - 49	10.8	8.0	10.8	7.3	2.0	6.6
50 - 59	12.8	8.2	12.7	8.0	2.9	7.5
60	16.0	11.2	15.8	8.7	5.4	8.4

Source: Census 1975, vol. V

with above-average unemployment are those of the rural interior. Highest unemployment is in the North-Western governorates (Jendouba 29.4%, Le Kef 17.8% and Bizerte 16.7%. In addition, the central governorates of Kairouan (18%) and Kasserine (14.3%) also have above-average rates. On the other hand, the governorates of the Sahel and of Tunis have unemployment rates substantially below the national average (Monastir 8.9%, Tunis 9.8%. Mahdia 7.4%).

Unemployment is undoubtedly one of the major problems facing the Tunisian government. The problem is exacerbated by the characteristics of the unemployed, which include the urban/rural differential, and the age structure of the unemployed (table 3.25). Unemployment is heavily weighted to the younger age groups. In 1975, almost 39% of the economically active people aged 15 to 19 were unemployed, as were 23% of those aged 20 to 24. In age groups above 25, unemployment rates decline, averaging between 6 and 7%. Unemployment amongst the young has become worse since 1966, when 37% of those aged 15 - 19 and only 16% of those aged 20 - 24 were unemployed. In 1966, however, unemployment was higher amongst the older age groups.

Unfortunately, the rising unemployment amongst the young is made more of a problem by the expansion of the Tunisian education system:

> 'It has become alarmingly clear in Tunisia that the rising number of adolescent school-leavers produced by the reformed and expanded school system is outstripping the available means for their social and economic integration into Tunisian society'.
>
> (Allman 1979, p.82).

A large pool of young, educated unemployed is generating a rising degree of frustration and tension in Tunisia. This has been made clear in the rising number of outbreaks of

student unrest during the latter half of the 1970s (Bishtawi 1978).

3.7.3 Income and Expenditure

Unfortunately, detailed statistics on individual incomes are not available. However, data are published on household expenditures and inferences can be drawn from these (INS 1978). It is clear that there are distinct differences between urban and rural incomes (Bourrinet 1975, Roe & Rieke 1975), but little has been attempted to redress the balance by the government. Minimum wages are now in force as a result of union pressure which resulted in a social contract in 1976 (Rivière 1979), but even with this, there are two minimum wages, salaire minimum inter-professionel garanti (SMIG - 214 millimes/hour 1978, and salaire minimum agricole garanti (SMAG) - 187 millimes/hour.

Mean annual household expenditure (1975) was 373.9TD (146.8TD/person). There was, however, a considerable variation between rural and urban areas (table 3.26).

Table 3.26 Characteristics of Household Expenditure by Milieu 1975

	Rural	Urban	Grandes Villes
Mean expenditure per year (Dinars)	643.4	904.7	1323.9

Source: INS Household Survey 1978, p.111

Although differences are in part a reflection of expenditure opportunities, they represent basic differences in real household income between the three zones. These differences are substantial; household expenditure in Grandes Villes was more than twice that of rural areas.

Rural/urban differences are further emphasised when household expenditure is structured into groups (figure 3.11). In rural areas, over 45% of households spend less than 80TD p.a., and only 20% spend more than 160TD p.a. This compares with figures of 9% and 60% respectively for households in Grandes Villes.

Differentials in household expenditure between urban and rural areas are obviously not solely attributable to place of residence, but also to type of economic activity (table 3.27). The two activities which dominate the rural sector, agriculture and crafts, provide households with substantially lower expenditure potential than do other economic activities. Mean annual household expenditure where the head of household is employed in agriculture is only 6 75.4TD; that of the craft sector is 687.2TD. This contrasts with figures of 1561.2TD (administration) and 1131.8TD (commercial) for predominantly urban activities.

Table 3.27 Mean Annual Household Expenditure by Economic Activity of the Head of Household 1975 (Dinars)

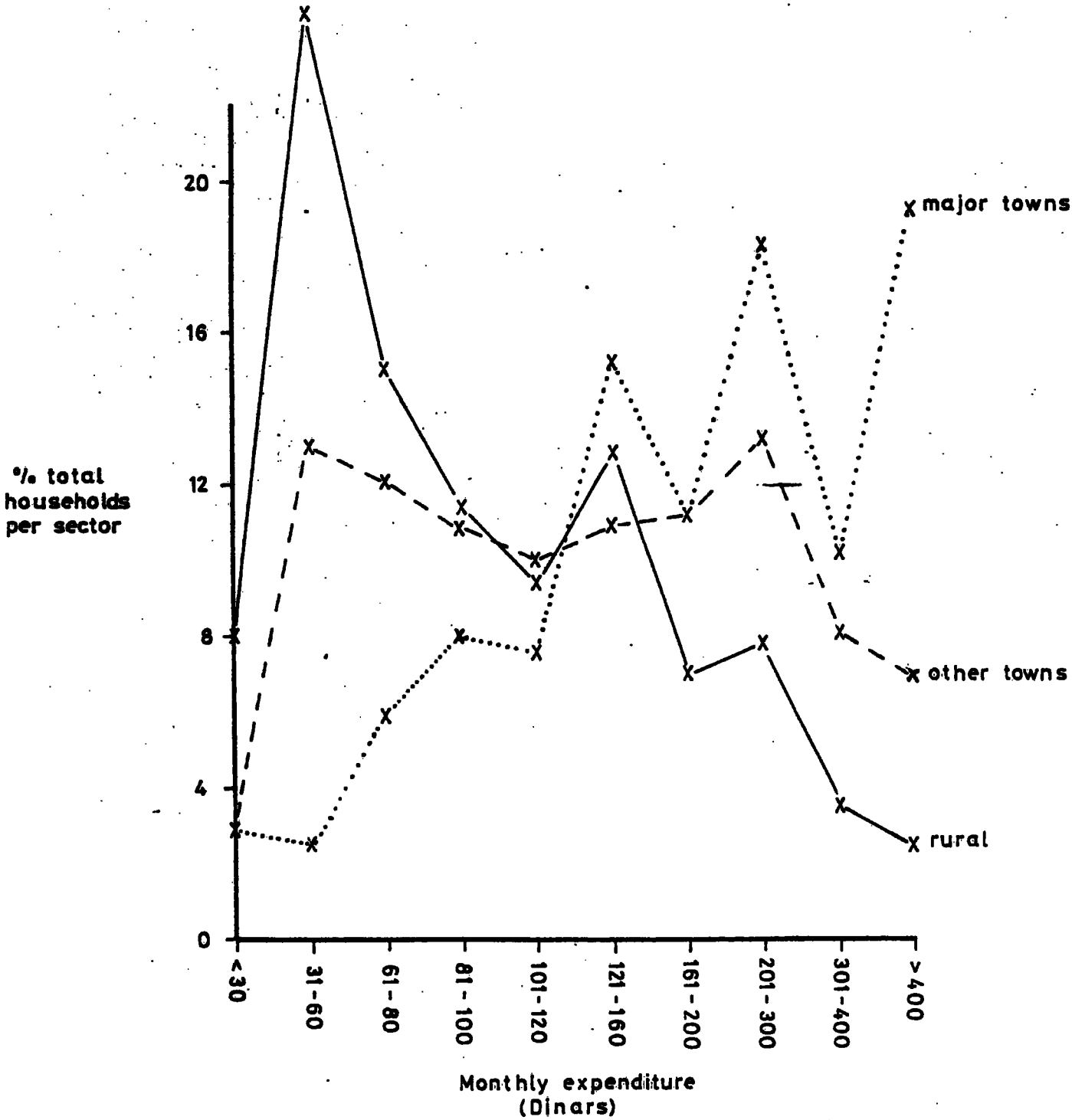
	Mean annual expenditure
Agriculture	675.4
Commerce and Banks	1131.8
Industry	1086.4
Construction	748.8
Transport	1275.3
Administration	1561.2
Service and Tourism	1098.6
Crafts	687.2

-INS Household Survey 1978, p.193

There are, therefore, important differences in living standards between urban and rural areas. This not only acts as a stimulant to rural-urban migration, but also creates

Fig 3.11

MEAN MONTHLY HOUSEHOLD EXPENDITURE BY SECTOR 1975



Source: INS 1975.

Table 3.28 Tunisian Health Infrastructure 1978

Governorate	Hospitals	Total No. of Beds	Dispensaries	Salles de Soin
Tunis	16	5506	35	-
Zaghouan	3	90	-	-
Bizerte	4	930	23	5
Beja	3	446	26	7
Jendouba	5	432	27	2
Le Kef	4	606	15	20
Siliana	4	129	17	8
Kasserine	5	176	22	14
Gafsa	7	506	41	7
Sidi Bou Zid	5	61	27	2
Gabès	3	454	56	8
Medenine	5	438	52	7
Sfax	4	976	67	8
Mahdia	3	217	-	-
Kairouan	5	500	24	3
Monastir	4	353	36	2
Sousse	2	798	38	3
Nabeul	8	740	35	13
Total	90	13358	541	109

Source: INS Annuaire Statistique, vol 24

Table 3.29 Actual Food Intake as a Proportion of Required Intake 1975

Nutrients	Required	Grande Ville %	Urban %	Rural %
Calories	2543	+ 7.7	+10.6	+24.4
Protein (g)	72.1	+51.1	+42.3	+64.7
Calcium (mg)	493	+10.4	-16.0	- 7.0
Iron (mg)	17.9	-12.0	+ 1.0	+44.5
Vitamin A (mg)	616	+ 9.2	+11.8	-16
Vitamin B_1 (mg)	1.53	+46.0	+54.0	+98
Vitamin B_2 (mg)	0.86	-28.0	-34.0	-25
Vitamin PP (mg)	28.3	+61.0	+74.0	+122
Vitamin C (mg)	88.3	+310.0	+260.0	+178

Source: INS Household Budget 1978, pp388-389

tension and ill-feeling. The rural population tends to feel that the process and benefits of development are passing them by when they see higher standards of living accruing to their urban compatriots.

3.7.4 Health

As with education, health facilities have received considerable attention in Tunisia since independence. A concerted effort has been made, particularly during the 1970s, to construct a network of health services which provides everyone with relatively easy access to some form of basic medical treatment. The basic units within the Tunisian health service are dispensaires and salles de soin. As indicated in table 3.28, provision of these is now even throughout the country, no governorate is particularly worse off than any other.

On an individual basis, health variations between regions in Tunisia are also low. Statistics on dietary intake reveal little significant difference between urban and rural areas (table 3.29). Although individuals in rural areas suffer from deficiencies of calcium (mean -7%), vitamin A (-mean -16%) and vitamin B (-25%), nutritional intake in this sector does, on the whole, compare favourably with urban areas. Nutritional intake in Tunisia certainly compares favourably with other developing countries (Ginneken 1976).

3.7.5 Habitat

The final problem area relating to rural society is that of habitat. Government intervention has been very noticeable since independence with the settlement of nomads and the provision of grants for individual house improvement. Throughout the first planning decade, however, a marked disequilibrium existed between the supply and demand of

housing (Dlala 1980). It was estimated that 23000 new houses were required yearly; only 10000 were actually built. One-third of these were built in Tunis and a further sixth in Sfax. This led to a housing crisis at the start of the second decade. The problem was equally one of urban and rural areas. In towns, as a result of in-migration and rapid population growth, gourbivilles were expanding. In rural areas there was a general shortage of housing and inadequate provision of services. During the period of the IV Plan, 73670 houses were built (forecast 66000), but most of these were in urban areas and for higher income groups. By the start of the V Plan period, there was still a desperate shortage of rural and cheap, urban housing.

The V Development Plan forecast the construction of 125000 new houses, but this is sufficient only to meet additional demand resulting from population growth, with only limited options to improve existing stock. Housing planned by the government under the Plan is based on low-cost, easy construction types. These houses (cost: 1300TD for logements ruraux; and 3600TD for logements suburbains) are designed to meet an urgent social need and, consequently, comfort 'extras' tend to be ignored. Nevertheless the provision of only basic stone housing often enables many people to greatly improve the condition of their habitat.

3.8 Conclusion

The rural society and economy of Tunisia form a vital component of the national structure. Not only does a substantial proportion of the population live in rural areas, but the national economy is itself dependent on rural activities, in particular agriculture. Within rural Tunisia, however, there is obviously a wide range of problems and difficulties to be

faced. These range from basic resource difficulties, such as lack of water and poor general physical conditions for agriculture, to the more complex problems that have been posed by the process of development itself, such as rising aspirations of an increasingly educated populace.

The point that really must be emphasised, however, is that the Tunisian rural problem is not one simply of agriculture or of rural society, but of a whole complex of factors which, in reality, are extremely difficult to isolate. This chapter has given some indication of this range and of the inter-relationships and from it, the necessity for an IRD programme such as discussed in Chapter Two, can thus be envisaged.

CHAPTER FOUR

THE TUNISIAN RURAL DEVELOPMENT PROGRAMME

4.1 Introduction.

The Tunisian government has been conscious of the problems of the rural sector since independence and various attempts have been made to tackle them. Much of the effort has, however, been fragmented, with little attempt to solve the root causes of the difficulties. In the late 1950s, a food for work programme was initiated (Costa 1966, Grissa 1973). This attempted to alleviate the employment problem only. It was, in essence, a public works programme in which labourers were paid with money, supplemented by couscous and other basic food items. The problem of agricultural production was approached head on with the instigation of the co-operative programme (see section 3.3.1). Although this did also attempt to improve other aspects of the rural problem, such as housing and service provision, the whole programme was fraught with such difficulties and tensions that little was achieved with regard to either agricultural production or social developments.

Foreign involvement in the development of the Tunisian rural sector has been considerable. Various divisions of the UN have been heavily involved in several projects. These have also tended to concentrate on just one aspect of the rural problem. Project PAM 482, for example, (sponsored by the World Food Programme), was initiated in response to a serious food crisis in Tunisia in the mid-1960s and although it was extended in 1971 to encourage the further development of service co-operatives, it never attempted to solve the fundamental cause of the food shortage. (Anon 1973). The UN Development Programme in the early 1970s financed a programme in order to assist the development of small-and medium-scale farmers, and

the FAO has sponsored a project to protect sandy soils from erosion (FAO 1979).

The Americans and Belgians have also been heavily involved in various rural development projects. During the early 1970s, USAID led a rural development project in two delegations of southern Siliana (James 1976). Although this did attempt to solve basic causes of rural difficulties, it was confined only to a small area of Tunisia. From Belgium there has been a considerable transfer of technical expertise. Belgian extension workers were involved in the Nebhana project until 1979/80 and teams from the University of Wageningen have produced a series of comprehensive reports on agricultural development in various governorates of Tunisia (Wageningen 1975).

There have been indications during recent years that Tunisian rural development projects have become less oriented to specific aspects and have increasingly attempted to co-ordinate investigations of the numerous elements of the rural problem. In particular one can refer to the Projet de Développement Rural du Gouvernorat de Sousse 1975 - 76 (Groupe Huit 1974) and the Projet de Développement Rural Intégré : Tunisie Centrale, a joint project between the UN and the Tunisian government (Min. du Plan 1973/74). More important, however, was the recognition by the Tunisian government of the need to instigate a co-ordinated national rural development programme. In 1973 the Government finally adopted a policy for rural development which took account of its wide and complex nature (Ben Said 1979). Decree No. 310 - 73 of 20 June 1973 instituted the programme d'animation rurale et de promotion de l'emploi. Not only was work within the programme to be integrated but, more importantly, the necessity to integrate the elements of rural development was recognised, as was the need

to increase the integration of the rural economy and society into the national framework (Min. du Plan 1976).

The objectives of the programme du développement rural (PDR) were initially two-fold:

i) a socio-economic objective whose basis lay in the promotion of employment and the improvement of incomes and living conditions in the rural sector;

ii) an administrative objective whose basis was written within the framework of the policy of decentralisation of government enterprises. This objective essentially consisted of the close involvement of local and regional authorities in the elaboration and execution of regional rural development programmes.

The key element of the PDR is the creation in each governorate of an Office de l'Animation Rurale (OAR). This office is under the control of the regional authorities and is supported by governorate level offices of state technical departments. The role of the office consists of the conception of the PDR, preparation of initial studies, implementation of the approved programme, co-ordination of all agencies involved, monitoring, modification and, finally, evaluation.

Although essentially functioning at the regional level, Tunisian rural development planning and programmes are incorporated into the objectives of the national development plans. Progress of PDR development thus usually takes the following stages:

Stage	Organisation Responsible
1. Identification of problems and programme orientation	OAR, regional technical services and the state.
2. Programme study	Regional services of the state for small projects; central services or bureaux d'étude for large projects.
3. Collaboration between projects within the programme	OAR.

4. Sanction at the regional level	Regional commission for rural development.
5. Sanction at the national level	National commission for rural development provided by the Prime Minister and assisted by the Technical Commission for rural development presided by the Minister for Planning.

Direct finance for the PDR is included in the national budget and is divided into two parts: a minimum programme budget which applies to each governorate; and supplementary finance available for special projects in the less-developed rural governorates. In addition, finance allocated to organisations such as the Commissariat Régional au Développement Agricole (CRDA) is used in part to supplement actions financed from the regional PDR budgets.

4.2 PDR During the IV Plan (1973 - 76)

4.2.1 'Programme Normal'

Money allocated to this programme is used to finance small-scale diversified projects in the fields of formation professionelle (vocational training), creation and consolidation of employment and the improvement of living standards. Finance for the overall programme (47.4 MTD) was divided equally between the 18 governorates - approximately 700 000 TD per governorate each year (table 4.1)(1).

Job training projects were closely tied to those for creating and consolidating employment, and during the period of the IV Plan were concentrated on three sectors (table 4.2).

---

(1) Data relating to national PDR budgets taken from IV and V National Development plans.

Table 4.1 PDR Finance IV Plan
(Normal Programme)

1	MD	%
Formation Professionnelle	6.2	12.8
Creation and Consolidation of Employment	11.1	23.4
Improvement of Living standards	18.2	38.7
General projects	9.3	19.6
Management costs	2.6	5.5
	47.4	100

Table 4.2 PDR Vocational Training
IV Plan

	MD	No. of beneficiaries
Agriculture and Fishing	1.2	6459
Crafts	3.3	28771
Diverse small trades	1.7	9008
	6.2	44238

This programme was aimed primarily at young people aged 14 - 25.

Job creation and consolidation utilised 11.1 MD 1973 - 76 and affected 60 000 people. Due to the importance of agriculture in the rural economy, this sector inevitably received most of the finance (table 4.3).

Table 4.3 PDR Creation and Consolidation of Employment IV Plan

	MD	No. of beneficiaries
Agriculture	7.2	42 205
Fishing	0.7	1 960
Crafts	0.9	10 643
Diverse small trades	2.3	5 683
	11.1	60 491

Aid in the agricultural sector enabled small- and medium-scale farmers to purchase items such as motorised water pumps, irrigation pipes, seeds and fertilizers in order to improve and consolidate agriculture. In the fishing sector, young men in particular were assisted in the purchase of new boats and equipment. The distribution of weaving materials and machines, particularly to young girls, was the major area of expenditure within the craft sector.

Money for the improvement of living standards in rural areas totalled 18.2 MD 1973 - 76. This represented 38.7% of the total financial allocation for the programme normal. It was distributed as indicated in table 4.4.

Table 4.4 PDR Improvement of Living Standards IV Plan

	MD	%
Rural Housing	2.9	16.0
Health (1)	1.5	8.2
Roads	4.9	26.9
Distribution of drinking water (2)	3.8	20.9
Sporting and cultural equipment	1.5	8.2
Rural electrification (3)	2.2	12.1
Drainage	0.5	2.8
Other	0.9	4.9
	18.2	100

(1) Provision of 129 dispensaries and 147 salles de Soin.
(2) 1200 public water points, 209 new localities served with water.
(3) Electricity supplied to 345 rural localities.

4.2.2 Supplementary Projects

These affected the governorates of Gafsa, Jendouba, Le Kef, Kasserine and Medenine, and utilised a total of 15.5 MD. Expenditure was in areas similar to the programme normal, but on larger scale projects (table 4.5).

Table 4.5 Supplementary Projects of the PDR IV Plan

	MD	%
Formation professionnelle	0.6	4.0
Creation and Consolidation of Employment	2.9	19.2
Improvement of Living Standards	11.0	70.0
Other	1.0	6.8
	15.5	100

4.3 PDR During the V Plan 1977 - 1981

Specific objectives of the national PDR during the period of the V Plan were :

i) to realise 100 MD investment (compared with 63 MD of the IV Plan);

ii) to improve credit availability to less-favoured areas;

iii) to ensure greater integration between regional and national projects.

Otherwise the aims of the PDR for this period were to build upon the developments made 1973 - 76 (table 4.6).

Table 4.6 PDR Investment IV and V Development Plans

	IV Plan (realised)		V Plan (planned)	
	MD	%	MD	%
Agriculture and Fishing	10.5	16.7	17	17
Industry	3.4	5.4	10	10
Housing, Water and Drainage	12.2	19.4	17	17
Health	2.2	3.5	4	4
Roads	8.9	14.1	11	11
Electrification	3.7	5.9	15	15
Vocational Training	6.8	10.8	10	10
Other	15.3	24.2	16	16
Total	63	100	100	100

Again, approximately 700 000TD p.a. was allocated to each governorate under the normal programme (total 63 M TD), leaving 37 MD for special projects.

Investment for vocational training during the period 1977 - 81 is less oriented to the craft sector than it was during the period of the IV plan. The agricultural sector will benefit from 3 MTD of investment; the craft sector will also receive 3MTD, and diverse small trades 4 MTD. Training will continue to be closely tied to employment creation, but moves are being made away from the establishment of many small, local training centres, to the creation of a few large centres, attendance at which will be encouraged by the provision of grants by regional PDR authorities enabling young people to study away from home. It is also intended to increase the number of apprentices with money allocated from the vocational training budget. Priority will continue for 14 to 25 year olds, but, in exceptional circumstances, older people will be given the

opportunity to undertake job training.

Training in the agricultural sector will be particularly directed towards preparing people to work on the périmètres irrigués, 37 000 ha of which are expected to be developed in the five-year period. Craft training will be diversified in an attempt to break away from the dominance of carpet manufacturing. In particular, training facilities for woodwork, furniture making and sculpture will be developed. Apprentice schemes will absorb the bulk of the 4 MTD assigned for vocational training in the various skilled trades. There is a particular shortage of electricians, mechanics and other such skilled tradesmen and it is in these sectors that effort will be concentrated.

Projects for the creation and consolidation of employment aim to increase both production and income in the rural sector. Assistance will be complementary to that provided by existing special development funds such as FOPRODI and FOSDA. Thirty-seven million TD has been allocated under the V Plan to such projects and is divided as indicated in Table 4.7.

Table 4.7 PDR Creation and Consolidation of Employment V Plan

	MD
Agriculture and Fishing	17
Craft Sector	2
Small industry	8
Work to ease seasonal unemployment	10
	37

Agriculture and fishing continues to receive the greatest proportion of the budget, the objective being to ensure a permanent and stable source of income, particularly for the small farmers and fishermen. Aid is usually on an individual basis, although occas ionally it is to be allocated to

collective bodies. Unlike the finance made available during the IV Plan, that made available during the V Plan will only be provided to individuals in conjunction with loans secured from other sources such as banks, thus ensuring that farmers do not come to expect everything to be provided on easy terms. Assistance to other sectors will continue along similar lines to those of the IV Plan.

Funds for the improvement of rural living standards total 48 MD, by far the largest proportion of PDR investment for the V Plan. The emphasis within this sector will be on four components: distribution of drinking water, electrification, the construction of pistes and rural housing.

For rural electrification, 15 MTD has been contributed by the PDR budget to supplement the 27 MD already allocated by STEG for this purpose which, between 1977 and 1981 aims to increase the proportion of rural settlements with electricity from 14% (1976) to 55% by 1981.

A further 11 MTD has been allocated for the extension and improvement of rural pistes, with priority given to pistes serving agricultural areas enabling the improvement in the outflow of production.

Rural habitation will continue to be improved during the V Plan. Total finance of 5 MTD will be made available to contribute to the construction of 20 000 rural logements (300TD/ logement) and to assist with the improvement of existing housing stock.

With regard to the distribution of potable water, 8 MTD of the PDR budget allocation has been made available. Priority is for areas with acute shortages of water.

Finally, 4 MTD is available for the construction and equipment of rural health centres.

4.4 Institutional Framework of the PDR

The significance of the institutional framework for the implementation of integrated rural development was outlined in Chapter Two. The institutional component encompasses territorial administration, political structure (including popular participation) and less formal social institutions. Each will be examined in the context of Tunisia with particular reference to the governorate of Monastir, thus providing details of the mode of implementation of the rural development programme in the country.

4.4.1 Territorial Administration

Tunisia has inherited its concepts of public administration and its administrative structures largely from the period of the French Protectorate. Both the French and their Beylical predecessors stressed the dominance - political, economic and intellectual - of the capital as the primate city of the nation. This centralisation is still a dominant feature of Tunisian administration, although the growth of development axes along the coast and an awareness that rigorous centralisation is no longer necessary to development are beginning to alter government policies.

The territorial administration of Tunisia is under the control of the Ministry of the Interior. This Ministry combines functions related to law and order with functions related to the administration of the country.

The country is divided into eighteen governorates. Each is headed by a governor appointed by the President but responsible to the Minister of the Interior. Each governorate is divided into delegations which are, in turn, divided into sectors (secteurs). Delegates (délégués - the heads of delegations) and sector chiefs (omdas) are appointed by the Minister of the Interior. Except for the municipal councillors

and their president, there are no elected officials in the Tunisian administration. Over the years the number of governorates, delegations and sectors has increased sharply, thus permitting territorial officials at these levels to concentrate on smaller jurisdictional areas. Monastir governorate is itself one of the newest governorates, having been created in March 1974 out of the old Sousse governorate.

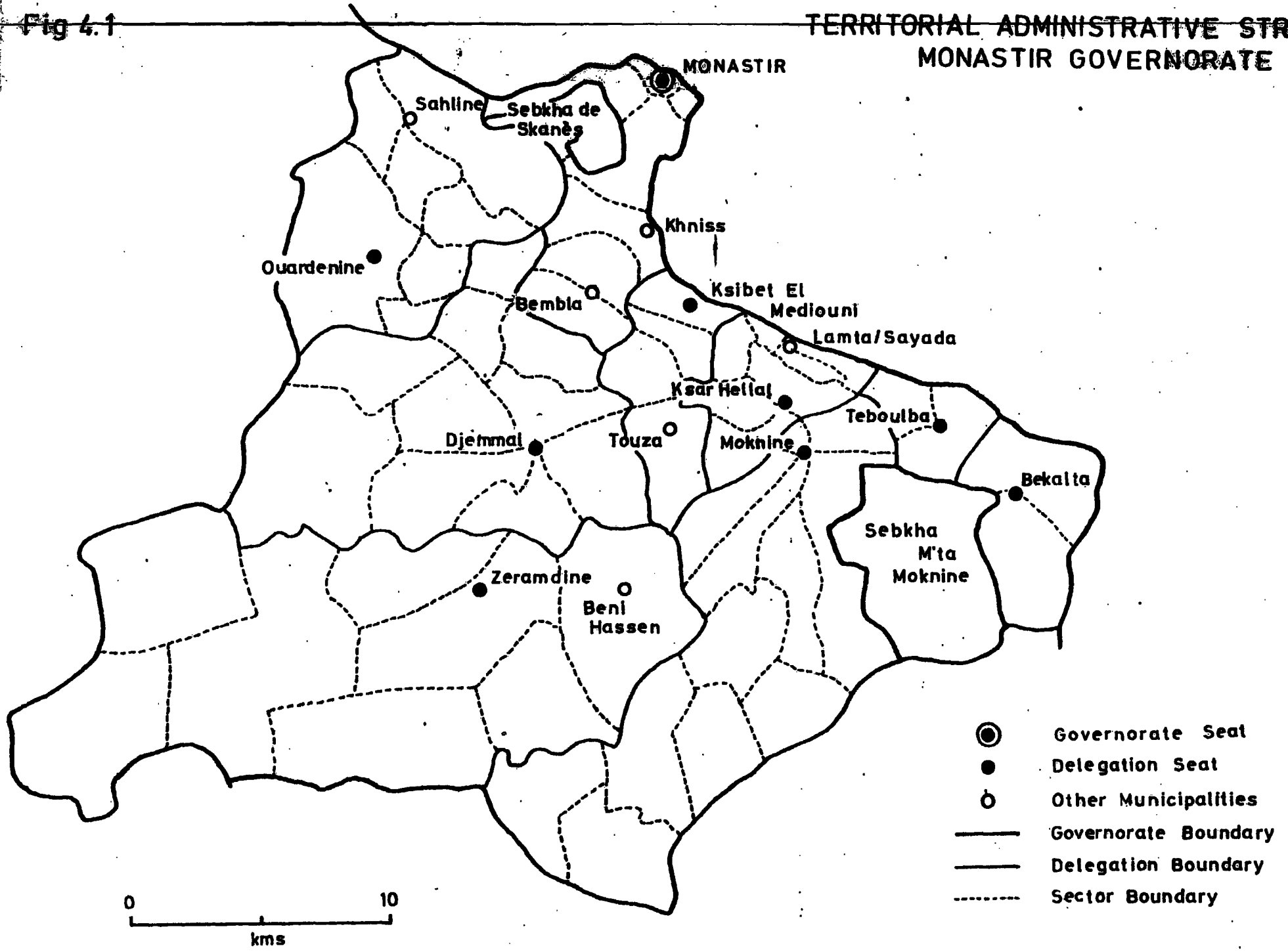
In addition to the three main levels in the territorial administration are communes (municipalities). All large urban centres, most delegation seats and a few of the other larger settlements are organised into communes. The extent of the communes through the rural areas of Monastir governorate leads them to play a potentially significant role in the rural development programme. The distribution of délégations, secteurs and communes in Monastir governorate is illustrated in figure 4.1.

a) Delegations and Delegates: The delegation is the lowest level of territorial organisation at which links exist with units of other ministries and agencies, and at which interagency governmental involvement can be obtained. It is therefore a crucial level of government in relation to the implementation of IRD. The delegates' function is defined by law as assisting the governor in the performance of his functions and administrating the jurisdiction under his authority. The law also calls on the delegate to "activate, co-ordinate and supervise under the governor's authority, the local field offices of the civilian governmental services" (James 1976).

Delegates are part of a career service, and are rotated periodically from delegation to delegation, or to positions at the Ministry or with municipalities. It is therefore unusual for a delegate to originate from the delegation in which he

Fig 4.1

TERRITORIAL ADMINISTRATIVE STRUCTURE MONASTIR GOVERNORATE



serves. The delegate has a small staff at the delegation seat of whom perhaps the most important is the senior police officer.

Within Monastir governorate there are nine delegations, two of which (Bekalta and Ksibet El Mediouni) were created in 1979, thus reflecting the continuous process of administrative decentralisation. Monastir delegations are of varying characteristics, but the more rural areas of the governorate are contained within the delegations of Ouardenine, Zeramdine, Djemmal and Moknine. As will become clear, however, actions of the PDR are not confined solely to these delegations.

b) Sectors and Sector Chiefs: Sectors, of which there are sixty in Monastir, are subdivisions of delegations. The sector is the smallest territorial administrative division and usually corresponds to one village. Head of the sector is the omda who is appointed through a system whereby, when a vacancy arises, the delegate responsible, in consultation with the local PSD cell, will forward three nominations to the governor, who then passes the selection onto the Minister for the Interior. The principal qualification for the position of omda - apart from the functional literacy which is really needed to perform the job - is to be a long-term resident of the sector. The position of omda closely correlates with that of shaykh under the Protectorate and Beylical administrations. It would now appear, however, that what used to be a position of collective respect and distinction has, to a certain extent, reverted to a role of general official dogsbody.

The law states that the omda, under the delegate's authority, assists the several administrative, judiciary and financial agencies in the performance of their missions. The omda is at the bottom of the territorial administrative structure. Amongst his tasks he makes grass-roots enquiries, announcements and takes actions assigned to him from above. He

responds to the demands of other agencies, but only rarely and indirectly can he initiate action.

To a certain extent, the omda also performs the role of local ombudsman, feeding back to the delegate information about conditions in his sector, and also assisting the local people in their dealings with the administration and guiding their actions in accordance with laws and regulations in force.

For all his services, the omda is paid a mere 65 TD per month, gets no logistic support and no rights to a pension. His office is usually his house and he depends for mobility on the National Guard. Omdas therefore tend to be drawn from the wealthier elements of the local population - usually larger landowners. Their workload does not permit them to work their own lands, and they therefore have to depend on the work of kinsmen or their own means to cover labour expenses. Their own income must also cover incidental expenses. Omdas tend to be attracted to the job not by financial gain, but by the moral and psychic rewards, and by the status of public service to the community. (James 1976). Often they are men with a good party record and are being rewarded for long, unpaid service to the local community. Also, traditional factors such as extended family ties continue to play a role in omda appointment and selection.

c) The Governorate and the Governor: The governorate is the lowest territorial unit at which field offices of technical ministries and agencies are emplaced, and function under the control of the territorial head. The governor, at the head of a governorate, is a career civil servant, and as a rule is not assigned to serve in his governorate of origin.

The governor is vested with the authority of the State and represents the government in his area. He is appointed

by the President and as such carries a good deal of status. The governor's terms of office are described in law as, amongst other things, 'being responsible for implementing national development policy at the governorate level, to which end he studies and proposes to the government appropriate measures for the economic and social advancement of his governorate ..... and having authority over the personnel of the government services that function in his region' (James 1976). The governor is thus representative of the government, implementor of policy of field agencies of national ministries, overseer of political entities and of public employees and maintainer of law and order. His central position at the regional level is thus crucial to the implementation of rural development.

d) The Governor's Staff: The staff of the governor is divided into two sections: those under the Premier Délégué, who is the governors immediate deputy, and those under the Secrétaire - Général, primarily responsible for administrative affairs.

Control of the region's political, cultural and educational and social affairs is held by the Premier Délégué and his staff. His office also co-ordinates the work of the territorial delegates and handles relationships with national agencies and with security services.

The Secrétaire - Général, on the other hand, monitors the proper functioning of the administrative apparatus, especially in matters of finance and economics. He is also charged with relations at the governorate level with the heads of field units of the several ministries and agencies. Under his control, the Secrétaire - Général has departments of economic affairs, administrative affairs, and of particular significance, the rural development office.

e) Field Units: Reference is made above to field offices of government ministries and state agencies. These include most of the public services and several specialised agencies, the work of many of which is relevant to the rural development programme. In all governorates these include the national water company (SONEDE), the gas and electricity company (STEG), a regional transport organisation which, in the case of Monastir, is the Société des Transports de Sousse (STS) and the Sûreté National. Also in each governorate is a regional employment office (OTTEEFP), a division of the public works ministry and a representative of the Agence de la Réforme Agraire. Also of importance are regional offices of the Agence de Promotion des Investissements (API). (The API office responsible for Monastir governorate is located in Sousse).

In addition to the above, there are a number of agencies specific to a few governorates. Those found in Monastir include the Commissariat Régionale au Développement Agricole (CRDA) whose aims are defined as:

i) promotion of the agricultural sector and

ii) the establishment of an adequate structure for the development of agriculture.

The CRDA also supervises all the activities of the several services of the Ministry of Agriculture in the region. Also in the agricultural sector is the Office de Mise en Valeur de Nebhana - the agency responsible for co-ordinating the development of irrigated areas supplied with Nebhana water (see Chapter Eight). The Office de Tourism Travail (OTT) is also significant in the Monastir area.

As well as Tunisian agencies operating within the governorate of Monastir, there are a small number of international agencies also involved in rural development work in the area. These include offices of the IBRD and the World Food Programme,

and Belgian extension workers.

f) Municipalities: Municipalities exist as a result of Ministerial decree. There is no strict population threshold for the establishment of a municipality, but on the whole, all delegation seats are created as such, as are most settlements of small town size.

The municipality is a local public body which has legal personality and financial autonomy, and is entrusted with the management of municipal affairs. Territorially and jurisdictionally, municipalities are within delegations, but outside a sector.

Municipalities are run by a municipal council elected by univeral suffrage for a three-year term. This council can impose certain local taxes and rates, collect rents on public lands and sell concessions for certain public services. It has its own budget. The council also serves as a consultative body in matters of economic and social planning. Delegates and the governor have supervisory responsibilities over the functioning of the municipal council, and especially over its finances.

The significance of municipalities to rural development is elaborated in the analysis of the spatial component of IRD (see Chapter Six). Their prime significance lies in the potential of a municipality, with its additional localised fiscal powers, to stimulate the development of local, sub-regional growth poles. With fifteen municipalities, several of which are located in rural areas, rural development in Monastir has the potential to exploit this particular resource.

g) The Governorate Council: The final unit of significance in the territorial administration is the Conseil du Gouvernorat. It is a body which links many of the elements of the administration and in it one also sees tangible evidence of

the close links between political machinery and administrative organisation. The council comprises officials of the territorial administration, representatives of the PSD and its specialised organisations, representatives of other organisations whose presence is especially requested and the presidents of the municipal syndicats. The governor is its presiding officer.

The council has consultative and corporate functions. It gives its views on the provincial budget, on proposed programmes or projects to be carried out in the governorate and on other matters placed before it by the governor. As part of its corporate role, the council can raise revenues for the regional budget by setting rates and assessing local taxes specified by law as being within its purview. These include public lands, users' taxes on utilities of certain types and the lease of certain rights with respect to markets. The council also exercises certain managerial responsibilities for rural areas and agglomerations not included under the jurisdiction of municipalities. For example, the governorate council takes responsibility for rural water supply, public roads and sanitation, schools and health services.

4.4.2 Political Organisation

The establishment of the Neo Destour party in 1934 was an attempt, led by Bourguiba, to break from the 'middle-class intellectual'-dominated Vieux Destour that had, till then, led the Tunisian nationalist struggle. The catch-phrase of the new party was "contact with the people" and attempts by the party to mobilize all levels of Tunisian society met with considerable success. The Neo Destour rapidly became the leading voice articulating the Tunisian desire for

independence. The party.....

> 'functioned as an instrument of national mobilisation and integration. Through its various open and clandestine activities, new expectations and a new sense of national solidarity were created and a situation achieved in which the French finally found the political, economic and moral costs of remaining rulers of Tunisia too high'.
>
> (Rudbeck 1967 p.32)

It has been noted, however, that there are two distinct stages of nationalism that can be identified: the first is prior to independence when the whole country is united in its struggle for independence; and the second occurs once this has been achieved. Instead of mass support, political leaders encounter mass apathy. The struggle for nationalism becomes a struggle against something less tangible - under-development (Beling 1965). These two stages have been particularly evident in Tunisia. The political struggles and crises of the first 15 years of Tunisian independence are not relevant to this discussion and have been documented elsewhere (Ashford 1965, Moore 1965, Knapp 1977). The problem of continued mobilization of the whole Tunisian population has, however, continued into the 1970s.

In 1958, the Neo Destour was structured to encompass the same territorial and vertical span as that of the administrative structure. The same structure exists today. Each sector has at least one party cell (Khaliya). The omda heads the cell, the local party secretary runs it. In addition, local professional cells exist in some areas to articulate the better educated or specialist membership.

A co-ordinating committee exists at delegation level to represent individual cells. This is headed by the delegate, although day-to-day running is entrusted to the secretary of the delegation co-ordinating committee.

Since 1963, the governor has headed the Party structure at governorate level. Under him is a full-time Secretary-General of the Governorate Co-ordinating Committee, who is the senior official responsible for party affairs at this level. The co-ordinating committee itself is elected every two years by delegates from all the party cells in the governorate.

At the national level, the party's most select and influential body is the Political Committee. Nearly half the members of the Cabinet are members of this committee and most of its members are also members of the National Assembly in which other senior party officials also hold seats. The President of the Republic is also President of the Party.

The PSD is thus well suited to form a major organ both for the articulation and the participation of the whole Tunisian population. Unfortunately, reality is far from the ideal. Despite its origins as a party breaking away from the dominance of the middle classes and intellectuals, the PSD has now become just that. Such a trend was predicted in the late 1960s when it was argued that Tunisia would move away from revolutionising planning oriented to the mobilization of the masses, to adaptive political strategies dominated by vested interests (Rudebeck 1970). That this has happened has been positively identified in Testour, where it has been noted that party cells have become dominated by the "new intellectuals" and the wealthier sections of the community, particularly landowners and shopkeepers (Hopkins 1979).

A single-party system, whilst suited to the co-ordination of the struggle for independence and to the guiding of a nation through its early post independence traumas, is not yet as well adapted to the stage now reached by Tunisia. Frustration at the dominance of the PSD, and particularly of its small, elderly ruling élite dominated by Bourguiba, is

increasingly evident in the country. Much of the feeling against the hierarchy has been led by the Tunisian labour movement, the UGTT, and Habib Achour, its Secretary-General. Particularly indicative of these feelings were the riots of January 1978. Although superficially the result of dissatisfaction with increased food prices, the undercurrents of feelings and tensions were far more complex (Anon.1978c, Bishtawi 1978). The results of the disturbances were heavy reprisals on the Tunisian labour movement, with imprisonment for several hundred of its members, including union officials, amongst them Achour. Bourguiba and his colleagues saw the UGTT as a serious threat to their leadership and it has even been tentatively suggested that the riots were fuelled by the government in order to provide an excuse to quell the rising power of the Union. (Bishtawi 1978).

Whilst tensions between the PSD and the UGTT have since cooled, primarily as a result of the installation of a party puppet as head of the UGTT to replace Achour, stability within the national political system has still not been ensured. Demands are increasingly being made for further democratisation, in particular for a break from the single-party system. So far, the charisma of Bourguiba has held everything together (Vandewalle 1980), but with his increasing age and continuing ill-health, the hold is becoming more tenuous. One of Bourguiba's strongest assets is his political flexibility, and in recognising the dangers of the present threatened instability, various liberalising measures have been adopted. In 1979, two candidates were allowed to stand for each seat in the elections for membership of the National Assembly, although both still had to be members of the PSD. In 1981, in the local municipal elections, formal recognition was finally given

to a limited number of other political parties, thus allowing them to nominate candidates for election. The list of recognised parties was limited and restricted to moderate groups who did not represent significant breaks from the PSD line, such as the Mouvement des Démocrates Socialistes (MDS) led by Mestiri and formed largely from former government ministers (Blackburn 1981). Although never as marked as this, Bourguiba has made such liberalising overtures before and a certain degree of sceptism must be retained (Wright 1980).

For the Tunisian political system to present a valid mode of popular participation in the development process, let alone national government, it must break from the present dominance of the single party, an élitist power structure and the charismatic leadership of one man. Substantial change must come soon before the death of Bourguiba, or else the country could possibly be thrust into turmoil with rival factions struggling for control. Such a break from the stability that has so characterised Tunisian society since independence would be catastrophic for the country. Not only would much of the good that has been done since independence be undone, but the country stands to lose much of its badly-needed support from the Western countries.

4.4.3 Social Institutions

Although not as significant in the rural development milieu as the territorial administration and the political organisation, social institutions are important in that they can be seen to serve the individual interest whilst at the same time raising collective consciousness. Foremost of such institutions is religion. In the light of the difficulties and conflicts inherent in the Tunisian political situation at present, to many, especially rural peasants, Islam offers one

of the few remaining modes through which people can make their voices heard. In all areas of Tunisia in recent years there has been something of an Islamic revival. This revival can be seen as a rejection of the modernist conceptions, secular and non-secular, that have grown in the country since independence (Tessler 1980). Although the movement at the moment is divided institutionally and politically, it presents a potential threat to the policies of the present government (Blum 1980). There is evidence of this Islamic revival in Monastir governorate. Virtually every town and village has either a new mosque, or is in the process of building one. To what extent, however, such developments can be attributed to the government who, through the provision of funds for mosque construction, hope to retain some degree of control over what is preached to the people, is difficult to ascertain.

Other institutions that exist within the rural development milieu include those run by villagers for themselves. These tend to be community associations and are usually linked with maisons du peuple. Such buildings are found in most villages and are, in essence, simply village halls. They provide meeting places for local community groups and through their construction, regional authorities have facilitated the establishment of indigenous collectives which have encouraged expression for a wide range of small community groups, ranging from sports clubs to womens institutes.

4.5 Tunisian Rural Development Within the Institutional Framework

The key to the success of the PDR lies in the ability of the OAR to operate efficiently within the above-described milieu and to co-ordinate all the actions of the relevant agencies. Exactly how it fits in to the whole institutional

framework is illustrated in figure 4.2.

First stage of rural development planning is the preparation of the plan itself. In the context of Monastir governorate and the V National Development Plan, consultations took place in Monastir governorate from the beginning of 1975 between the OAR, the delegates and omdas of the region and representatives of the specialist agencies, in order to determine the needs of the area. This was followed by consultations with agencies such as SONEDE and STEG, to establish practicalities and priorities. Final recommendations were them compiled in a report submitted for approval to the national planning ministry. Inevitably the objectives and plans drawn up at this stage were done within the broad lines already established at national level for the V Plan.

Once approved by the planning ministry, a detailed sectoral interpretation of the plan was made (Min. de l'Intérieur 1976). This document provides the framework for rural development in Monastir governorate 1977-81.

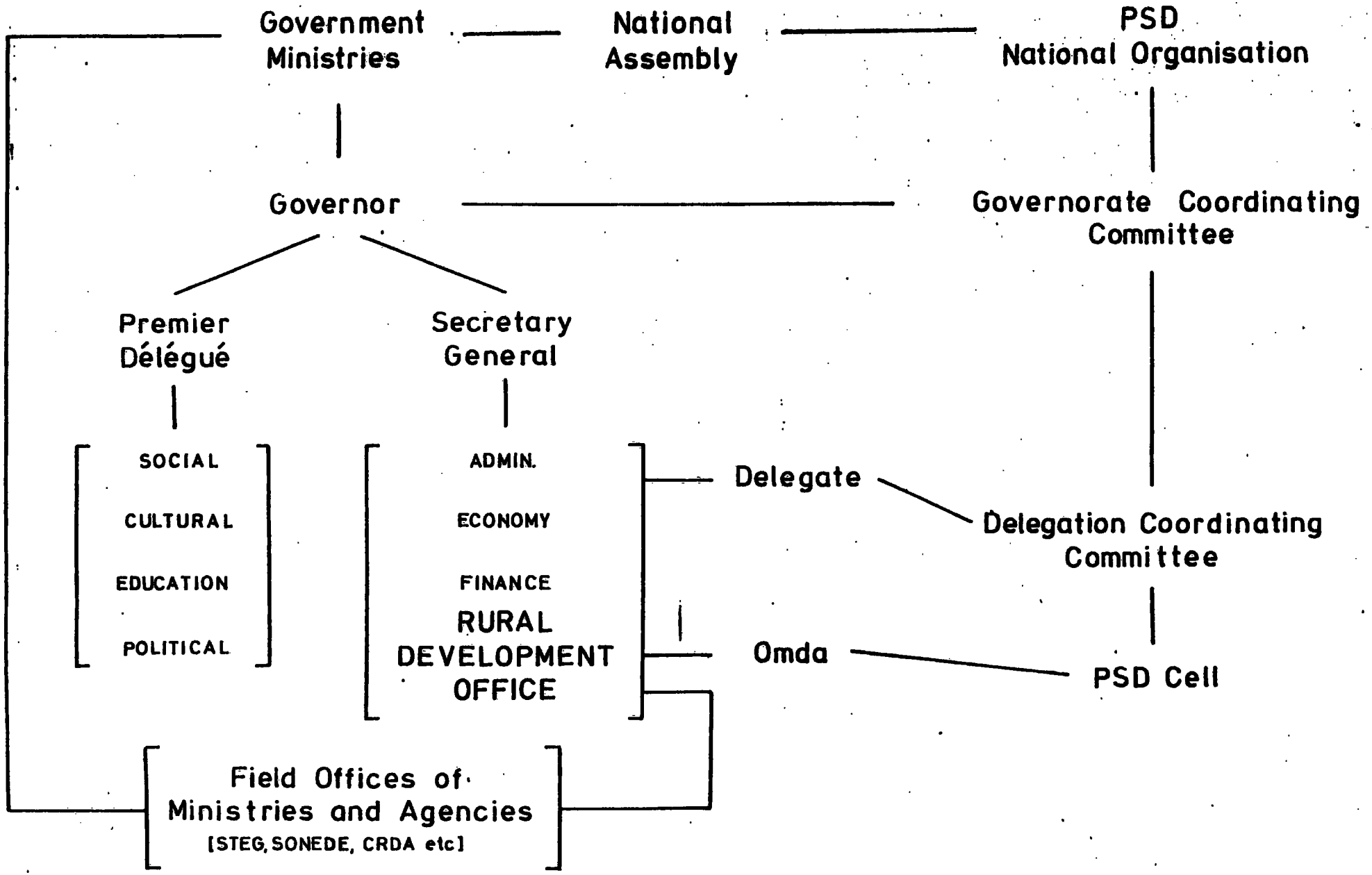
Plan formulation is thus a result of a compilation of local needs as expressed by a wide range of representative bodies, an assessment of its practicalities by specialist agencies and of co-ordination of these elements by the OAR.

The key role of the OAR lies with the implementation of the plan. A successful approach to the multi-faceted rural development programme requires a co-ordinated multi-disciplinary approach. With its relatively limited budget of 700 000 TD a year, the OAR is not so much concerned with the execution of individual projects itself, as with the support, financial and administrative, of projects carried out by agencies such as the CRDA and SONEDE. The OAR co-ordinates and, where necessary, supplements actions taken by such bodies.

For these purposes, the Monastir OAR has a fairly small

Fig 4.2

POLITICAL AND ADMINISTRATIVE STRUCTURE OF TUNISIAN RURAL DEVELOPMENT



staff led by a director (who in Monastir is also Chef des Services Economiques). There is a team of five full-time administrators based at the Monastir governorate headquarters. This is supported by a rural development advice centre located in each delegation manned by one or two staff.

The final function of the OAR is in the monitoring of the implementation of the PDR. This is essential in order to enable plan flexibility and adaptation to changing circumstances that are inevitable throughout any five year period. Monitoring is carried out through regular meetings between the Director of the OAR, political representatives and territorial administrators.

4.6 Conclusion

Since 1973, Tunisia has thus had the benefit of a purpose-built framework for national rural development. This framework has the additional advantage of being able to closely tie-in with the national territorial administration and national political structures. Consequently, the potential exists in Tunisia to initiate and implement a fully integrated rural development programme along the lines of the strategy outlined in Chapter Two.

The principal component of the Tunisian rural development programme is the regional rural development office upon which the success of the overall programme hinges; emphasis within the overall strategy is thus very much laid at the regional level.

Although there are many advantages to the Tunisian rural development structure, it will be clear from following chapters and from specific reference to one governorate, that a system which looks ideal on paper, inevitably experiences many problems and difficulties. Despite these,

it will be demonstrated that the system does have potential, and has already achieved several notable successes.

CHAPTER FIVE

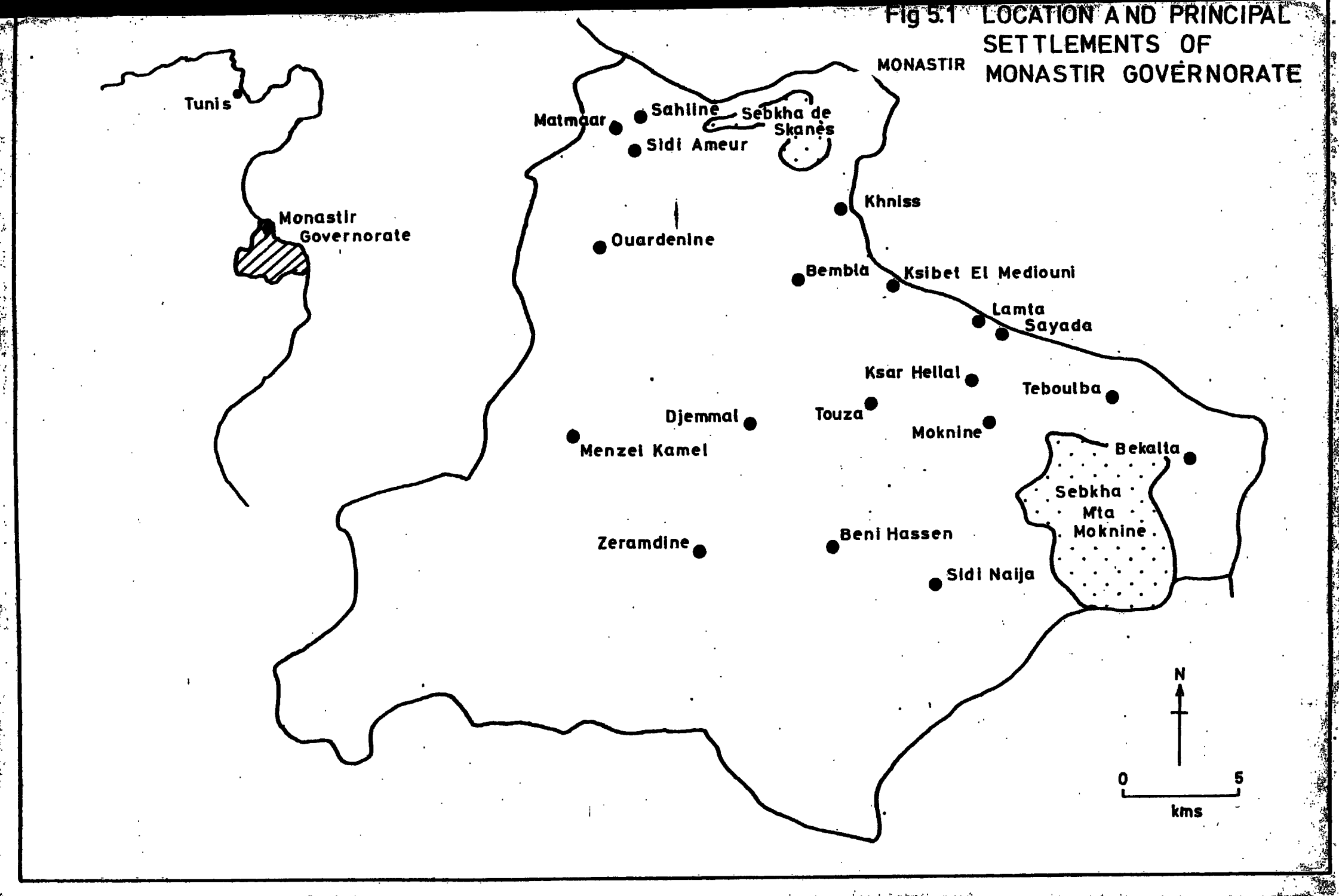
RESOURCE EVALUATION OF MONASTIR GOVERNORATE

5.1 Introduction

A prerequisite to any integrated rural development plan must be a resource evaluation of the area in question (Livingston 1979). In order to place the discussions contained in this thesis in their proper context, it is useful to provide such an evaluation of the resources in Monastir governorate. This includes an analysis of the physical environment, indicating the limitations imposed on agriculture and other rural activities; an assessment of the human resource potential with particular reference to the rural population; and, thirdly, a study of the regional economic base.

Monastir is one of the newest governorates of Tunisia, having been created on the 9 March 1974, and it is also the smallest (97465 ha). It covers a triangular wedge of land in the heart of the Sahel, bounded to the north-west by the Sousse governorate, to the west by the Sebkha Sidi El Hani, to the south by the governorate of Mahdia and to the north and east by the Gulf of Hammamet (figure 5.1). It is an area of considerable social and economic contrast, ranging from the comparatively modern town of Monastir itself, through the luxury hotels of the Dkhila strip to the undulating, sparsely populated olive-producing inland areas. It is a region of great political awareness and has strong connections with the national government; Bourguiba and several of his closest advisors were born in, or around, Monastir. Yet, despite its strong cosmopolitan elements, the governorate continues to

Fig 5.1 LOCATION AND PRINCIPAL SETTLEMENTS OF MONASTIR GOVERNORATE



support a significant rural sector in which many changes have been taking place.

5.2 Physical Resources

5.2.1 Relief

In terms of physical relief, Monastir governorate can be divided into five zones (figure 5.2). The main feature of the area is a broad plain extending from Sebkha Sidi El Hani in a north-easterly direction towards Monastir town. Before reaching Monastir peninsular, the plain turns sharply to the north-west, ending at the sea, west of Skanès. This north-westerly extension of the plain of Djemmal is covered by the Sebkha de Skanès. At its broadest, this plain is some 6 kms in width, is extremely flat and gradually rises from the sea to a height of 60m in the vicinity of the Sebkha Sidi El Hani. The Djemmal plain is bounded to the north-west and south-east by two ridges of higher land. The more northerly of the two again extends from the Sebkha Sidi El Hani and ends to the south-west of Sahline. Its upper surface is gently undulating, reaching heights of 115m north of Menzel Kamel. The south-east and north-east facing perimeters of this ridge are dissected by a series of gullies. Gullying, however, is far more extensive on the more southerly of the two ridges, particularly on the north-west facing slope in the region of Zeramdine. The southern ridge, known somewhat misleadingly as the Dôme de Zeramdine, is, at its highest point, 176m above sea level, and extends almost from the coast in the Bembla/Khniss area for some 60 kms to the region of Chorbane, forming the southern boundary of the Sebkha Sidi El Hani. The fourth major relief zone is that which lies to the south and west of the Dôme de Zeramdine. This is a relatively level area, of an average altitude of 10 - 20m, and is dominated by the Sebkha M'ta Moknine. Finally, there is the peninsular on which Monastir

itself is situated. This is a raised plateau of land, of some 30 - 40 m altitude, bounded to the south-west and north-west by very marked slopes. Again, as with the other two higher areas of the governorate, the upper levels of this plateau are relatively flat, with a gentle slope down to the south-east.

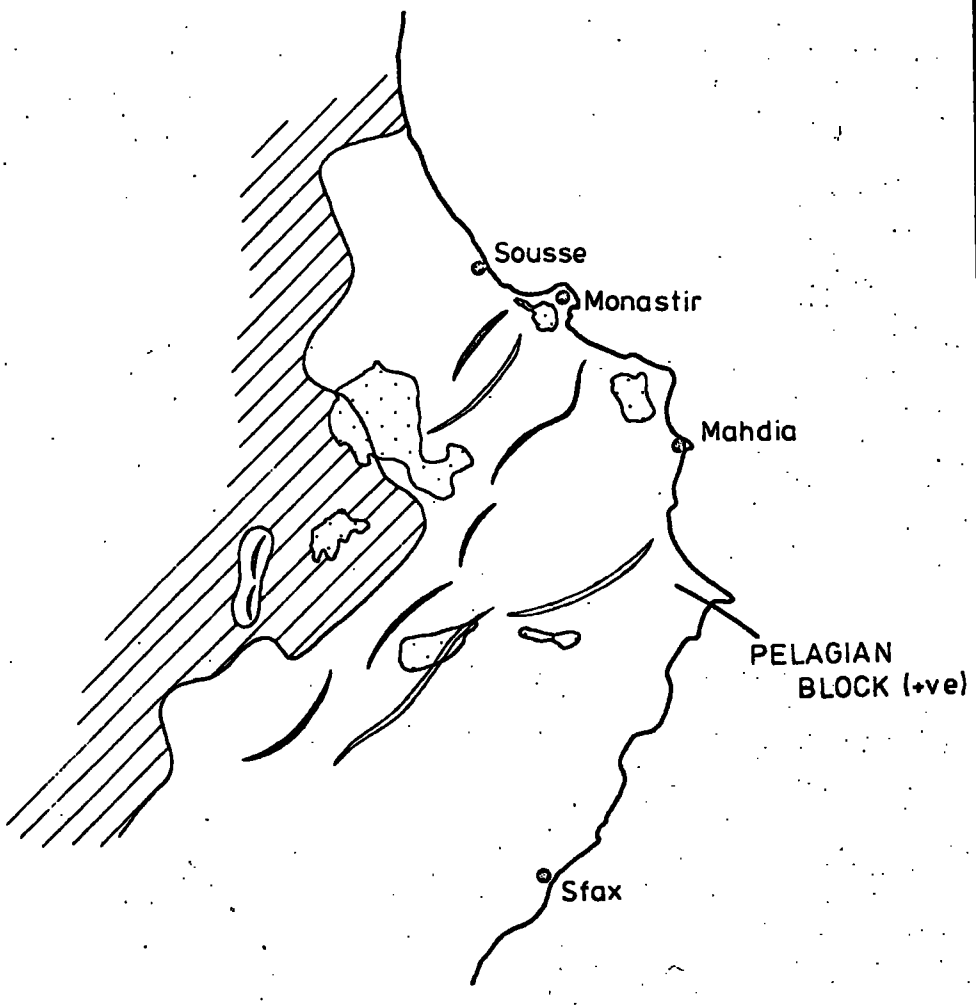
5.2.2 Geology

Having described the relief of the area in brief terms, one can now turn to a closer study of the geological structure which helps explain the present relief. The area of Monastir governorate covers a part of the African Pelagian block, a large craton extending south to the Kerkennah Isles and to Cap Bon in the north. During the Mesozoic and Nummultic (Palaeocene - Eocene), this area was a stable shelf, becoming unstable during the Miocene and Pliocene. The orogenic movements that occured in this period gave rise to a series of asymmetric folds throughout the Sahel (figure 5.3) such as those found in Monastir governorate. The asymmetry, characterised by steep flanks to the north/north-west, is a result of the tectonic forces acting in a south-east - north-westerly direction. In conjunction with the Miocene - Pliocene uplifting was a series of marine transgressions, which led to the deposition of sedimentary material in local basins such as those in the Djemmal plain and the area around the Sebkha M'Ta Moknine. Tertiary deposition, however, was not rapid and, consequently, thicknesses of deposits are not great (Burollet 1967).

Sedimentation continued in the lower Quaternary (Villafranchien) and is similar to that of the Pliocene. This was followed by another significant orogenic phase which led to general uplifting in the Sahel, exposing the deposits. Deposition continued during the middle and late pleistocene

Fig 5.3

Tectonics of the Sahel



Peri-Atlasic recent basins

Sebkha

Anticline

Syncline

N

0 50

KMS

Source: Burollet, P F (1967) p 53

but consists mainly of talus, alluvium sand loess and soils. Tectonic movements have been confined mainly to local subsidences during the remainder of the Quaternary.

Structurally, therefore, Monastir governorate mainly consists of two main Miocene/Pliocene activities, separated by an infilled syncline. The peninsular of Monastir town itself is also another small, anticlinal structure of the same era. The area to the south of the Dôme de Zeramdine represents a zone of late Tertiary and early Quaternary sedimentation which has subsequently been uplifted. The two sebkhas of Skanès and M'Ta Moknine represent areas of localised late Quaternary subsidence within the general uplifted block which have subsequently become zones of inland drainage (Despois 1955, El Batti 1976).

The above tectonic history is reflected in the geological map (figure 5.4). The anticlinal structures of the Miocene/Pliocene are made up essentially of alternating sandy clays and clayey sands. The depth of these layers is substantial, varying from several hundred metres to over 1000m in places. Being of a continental formation, these beds are characterised by very mixed sediment.

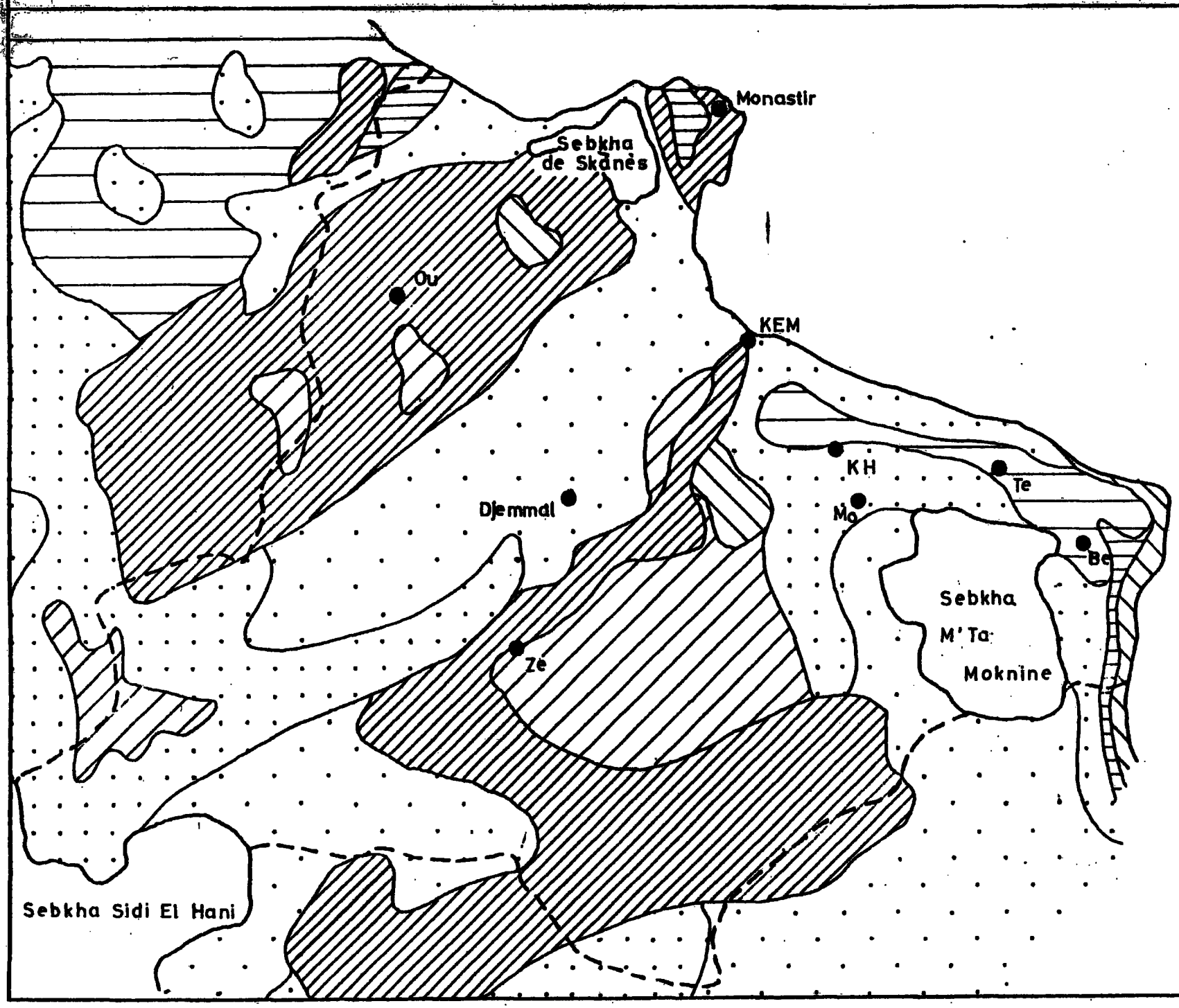
Along the coast, and in one or two localised areas, beds of Pliocene marine deposits are exposed. These are characterised by a kind of sandstone. These deposits are not dissimilar to the Quaternary marine beds found along the coast which are of a depth varying between 10 and 20 metres.

The other important Quaternary deposits are the Villafranchien beds. These are formed from predominantly continental clay deposits and mask the Miopliocene strata with a calcareous crust.

The final element of the surface geology relates to the extensive alluvial deposits found in the basin areas of

Fig 5.4

Geology of Monastir Governorate



KEY

- Miocene Marine (Vindobonien)
- Mio-Pliocene
- Pliocene Marine
- Villafranchian
- Quaternary Marine
- Old Alluvium
- Recent Alluvium
- Boundary of study area

N

0 7

KM

Adapted from Despois 1955 p48

the governorate. As a general rule, these increase in age with increased distance from the coast.

5.2.3 Soils

The significance of the geology of the area for rural development is two fold: firstly, in terms of the actual relief that is given rise to; and secondly in terms of the soil that has formed on its surface. The influence of relief on rural activity in the region is minimal. With the exception of the sebkhas and the heavily-dissected anticline slopes, the relief itself does not limit agriculture in any way. The anticlines, although undulating, present no obstacle to the dominant form of agriculture in the region - olive cultivation -and, similarly, the relief of the coastal zone presents no serious limitations.

With regard to the soils of the region, two types can be seen to dominate - entisols and isohumic soils, with a relatively smaller area of calcareous soils in the coastal zone (figure 5.5). The anticlines themselves are dominated by isohumic soils, characterised by brown or red/brown soils of unconsolidated materials. With relatively high humus content, a clay mixed with sand base, and relatively good water retention properties, these soils provide a potentially fertile agricultural base. Given climatic considerations as well, the soils in fact prove to be ideal for olive and other fruit tree cultivation(1).

Moving from the anticlines, the wadis and main plain itself are dominated by entisols - soils that are characterised by youthfulness and are without, or have only the beginnings of, horizons. These soils are essentially sandy loess type soils, poor in humus and clays, but rich in nutrients.

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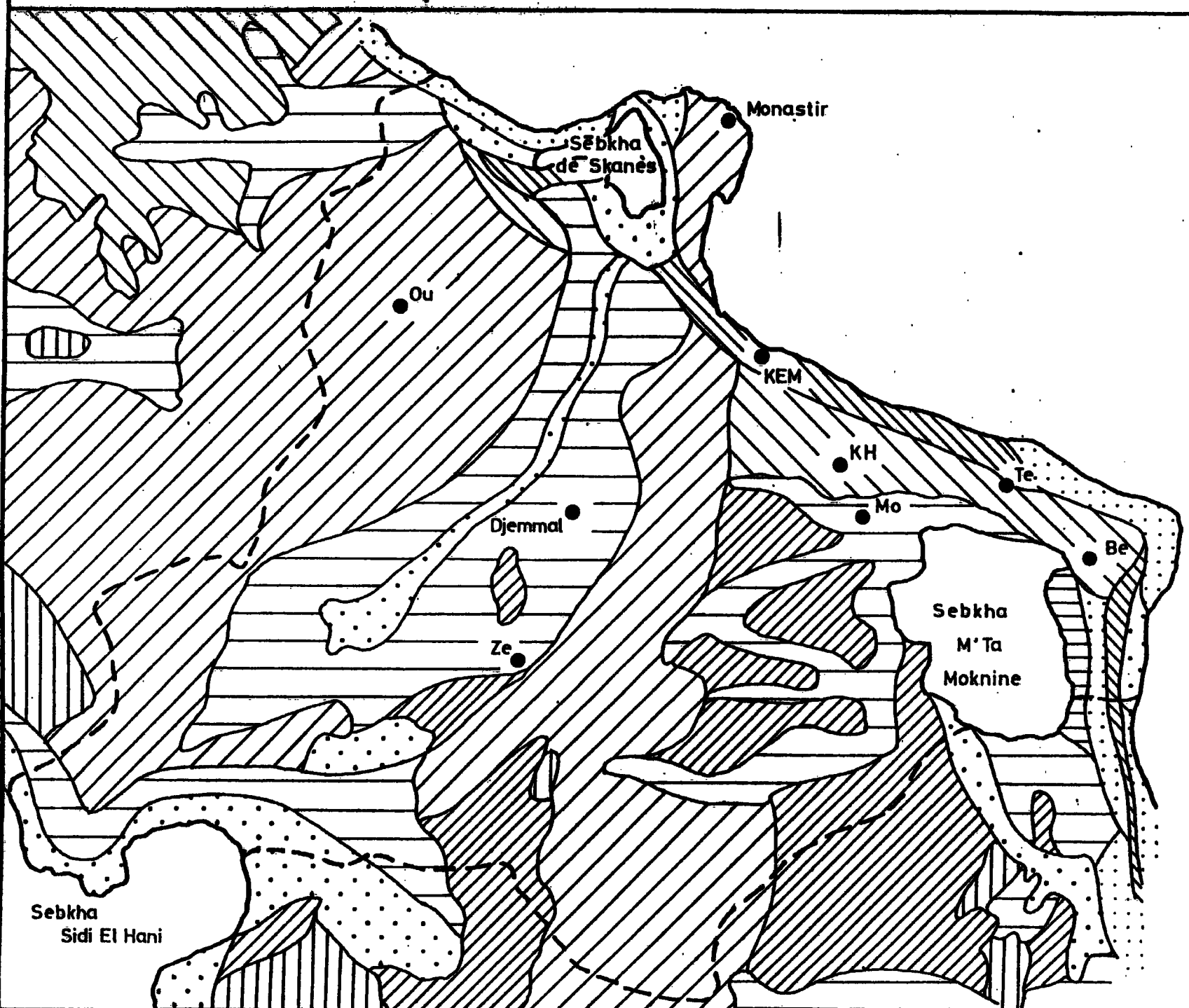
(1) Soil data provided by the Ministère de l Agriculture , Direction des Ressources en Eau et en Sol, Tunis.

Fig 5.5

Soil Map of Monastir Governorate



KEY

Crude mineral soils

Wind-born deposits

Entisols

Modified wind born deposits
- mixed with sand
- mixed with fluvial material

Calcareous soils

Rendzina and brown calcareous soils

Calcareous soils and lithosols/regosols

Vertisols

Topographically modified vertisols

Isohumic soils

Brown, Red / Brown soils

Brown soils assoc. with regosols or lithosols

Halomorphic soils

Extremely saline soils

N

0 KMS 7

Rep. Tunisienne Min. de l'Agric.

Water retention is poor and the soils, given that they are so light, are very susceptible to erosion in periods of heavy rainfall. However, according to Despois, provided that these soils are kept clear of unwanted scrub vegetation and kept stable through efficient farming, then they can provide a potentially fertile agricultural area (Despois 1955).

In the coastal zone north of the Sebkha M'Ta Moknine, in the area of Teboulba, calcareous soils predominate. Calcareous regosols are found along the immediate coastal strip, whereas the land behind this is characterised by rendzina and brown calcareous soils with calcareous accumulations. Although in places soil depth is no greater than 30cms, potential for agriculture is relatively high. Ph values average 7, humus content is quite high and water retention is good.

The final major element of the soil is an area of halomorphic (saline) soils. In the main, these are associated with the sebkhas and, because of their high salinity, are useless without extensive modification, for agriculture. It will be noted also that a strip of saline soil extends down the centre of the Djemmal plain, corresponding to the drainage channel formed during periods of heavy rainfall.

5.3 Climate

Monastir governorate is situated within the 'Mediterranean type' climatic zone, characterised by hot dry summers and mild, relatively wet winters. Given the physical location of the governorate, the local climate is somewhat 'gentler' than elsewhere in Tunisia. This is due to two factors: the proximity of the sea, and the Dorsale range of mountains to the north-west. According to Bouzaine, the extremes of temperature often found in the southern Mediterranean are tempered by the sea which is continually 'feeding' a

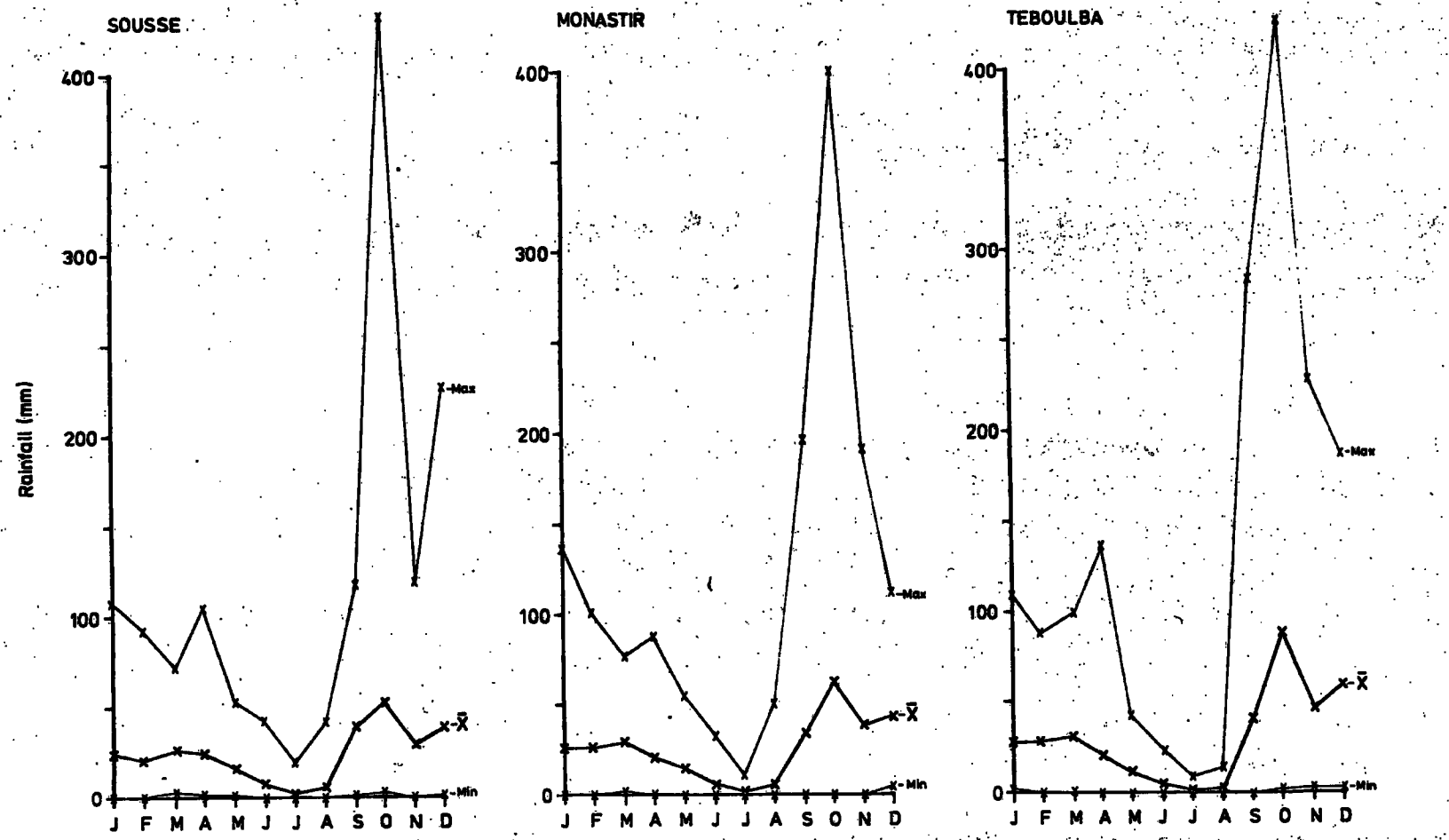
relatively humid atmosphere (Bouzaine 1979). In summer the sea has the effect of cooling local air temperatures and in winter, given that the average sea temperature is 2°C higher than that of the air, a local warming of the air tends to result. This has the effect of causing convectional instability and consequent precipitation.

With regard to the Dorsale, this has two effects on the area. Firstly, the mountain chain tends to block any incursions of Atlantic and South European (Genoa type) lows that frequently move eastwards along the Mediterranean and which are associated with cool, wet weather; and secondly, the mountains themselves are a source of cool winds that blow into the Sahel from the north and north-west. These winds (known as the Djebili) are significant. They blow for 29% of the year and 13% exceed velocities of 16m/sec. This compares with no winds at all in the Sahel for 29% of the year, and for the remaining 45% winds are evenly distributed around other points of the compass. The sirocco, a hot dry wind from the Sahara, is insignificant in the Sahel. Its frequency is low, and even when it does blow, its duration is short and its force is somewhat tempered by the influence of the sea.

Before assessing the influence of the climate on the rural sector in the region, it is first worth discussing its specific characteristics. Climatic data for the governorate is recorded at four stations in the area: at Monastir, Sahline, Moknine and Teboulba, and thus is not particularly representative of the area as a whole. However, data from the four does give some indication of general patterns.

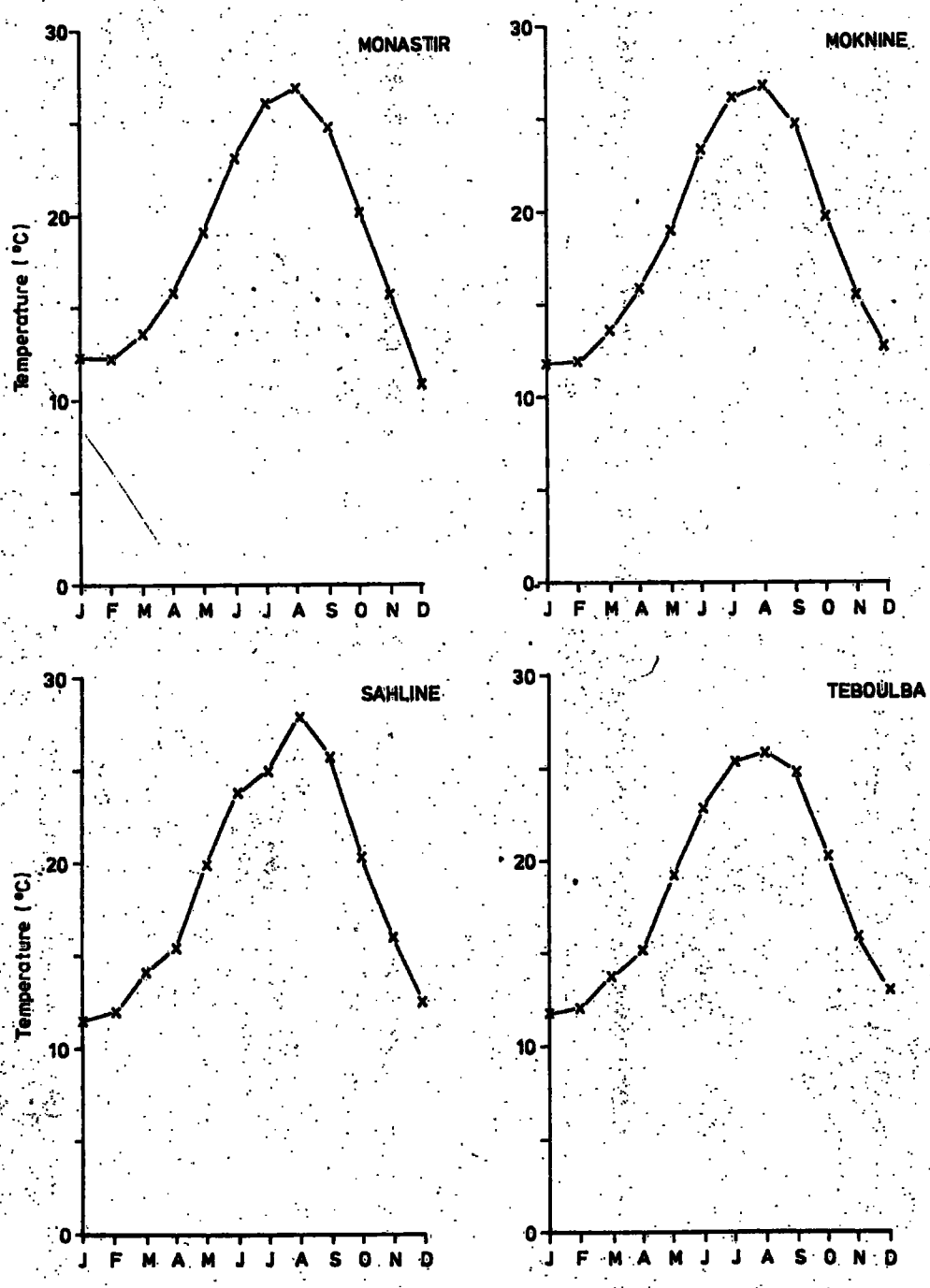
As will be shown below, the most important controlling variable for agriculture in Monastir is water (or lack of it). Rainfall in Monastir is low and irregular. Total rainfall for

Fig 5.6 MEAN, MAXIMUM AND MINIMUM MONTHLY RAINFALL 1941 - 1970



Mean Annual Total Rainfall: Sousse =290mm
Monastir =312mm
Teboulba =347mm

Fig 5.7 MEAN MONTHLY TEMPERATURE 1970 - 1975



DATA SUPPLIED BY INSTITUT NATIONAL DE LA STATISTIQUE, TUNIS

the area averages between 300mm and 350mm per year and annual distribution is illustrated in figure 5.6 for the only 3 stations for which there is a good 'run' of data. From these, two points stand out. Firstly, most of the rain falls in early autumn (September to October). At Monastir, on average, 57% of total annual rainfall falls between September and December. At Teboulba, this figure is 63%. Secondly, although total average rainfall is in the region of 320mm, this varies from as low as 109.5mm at Monastir and 110.4mm at Teboulba in 1945, to as high as 747.8mm at Teboulba in 1957 and 647.3mm in 1969 at Monastir. This variation in mean annual rainfall is reflected in figure 5.6 which illustrates maximum and minimum monthly rainfall for each of the three stations. A final characteristic of the rainfall of the region is that, when it does fall, the rain tends to come in relatively short, heavy bursts. This, obviously, is the least suitable form of rainfall for agriculture in a semi-arid environment. Water retention is poor, heavy erosion, gullying and water accumulation tend to result

Variations in temperature in the region are more predictable than those for rainfall. Although data are only available for relatively short runs, these are considered adequate for illustrating the general temperature trends (figure 5.7). From the diagram, it will be seen that regional temperatures range from high summer means of 26 - 27°C to mid-winter means of 11 - 12°C. This conforms with the expected trend for a littoral Mediterranean climate.

Finally, Monastir station provides data on humidity and insolation. Evaporation data are also provided from Monastir, Moknine and Sahline. These data are summarised in tables 5.1 to 5.3.

Table 5.1 Relative Humidity (%)
Mean Values 1970 - 75

	J	F	M	A	M	J	J	A	S	O	N	D
Monastir	72.8	67.8	69.1	69.7	69.3	66.7	66.0	66.3	71.0	69.5	68.6	74.2

Table 5.2 Insolation (hours)
Mean Values 1970 - 75

	J	F	M	A	M	J	J	A	S	O	N	D
Monastir	154	160	199	210	286	309	358	326	239	220	207	164

Table 5.3 Evaporation (Piche) (mm)
Mean Values 1970 - 75

	J	F	M	A	M	J	J	A	S	O	N	D
Monastir	87.8	104.3	117.6	123.0	143.0	173.5	210.6	195.6	157.4	140.0	108.6	81.1
Moknine	42.2	52.6	64.4	68.3	74.2	91.0	104.9	94.4	75.5	63.6	38.0	46.0
Sahline	76.7	90.0	106.0	158.0	193.0	219.0	247.7	261.4	192.3	160.7	99.6	87.6

Source: Institut de la Météorologie, Tunis.

The data presented in these tables represent an expected pattern as far as relative humidity and insolation are concerned. The evaporation data, however, are more interesting in that it will be noted that there is a significant difference between rates of evaporation on the coast (Sahline and Monastir) compared with the lower rates recorded at Moknine, a site approximately 6km inland.

Although the overall climate in Monastir governorate is thus favourably comparable to the rest of Tunisia, the fluctuations from the mean cause serious difficulties. The main problem is obviously the irregularity of rainfall. This is most serious when it occurs in the form of drought; 'quand la terre a soif, le fellah a faim' (Despois 1955 p.38). Should either the autumn or the spring be exceptionally dry, then problems arise. A dry autumn means that farmers have to delay land preparation before sowing, and leaving this too late has disastrous consequences for yields from the following year's harvest. It also leads to an extension of scorched pastures with no re-germination of grasses to feed flocks of livestock. Even if it rains after a dry autumn, then it is often too late to solve some of the problems that have arisen.

Similarly, a dry spring has serious consequences, in that it results in the dehydration of newly-germinating seeds. It again also entails loss of pasture for animals, and given the long, arid summer that lies ahead, this is probably the worst problem. If, however, 'toute l'année soit sèche, c'est alors un véritable désastre' (Despois 1955, p.39). The most immediate effects are substantial reductions in crop yields. This is clearly shown by the fact that in 1973 - 74, when rainfall was just 164mm, cereal production for the governorate was 9557 qx, compared to the production of 14760 qx in 1975-76, when rainfall was 436mm; similarly, legume production for the same years was

421 qx and 2041 qx respectively. Olive production, the main agricultural concern of the region, is less seriously affected by one-year droughts because of its two-year production cycle. Inevitably, of greater consequence is a series of dry years, such as 1935-38 and 1943-47. In such years Despois catalogues a whole series of misfortunes, such as increased illness, increased malnutrition and, perhaps most important, the necessity to either sell family wealth, be it in livestock or jewellery for deflated prices, or to borrow money from money-lenders at excessively high interest rates. Although such serious consequences have been alleviated to a certain extent by government rural development policies, drought continues to seriously affect crop yields.

Drought is not the only climatic vagary that causes problems. Excess rainfall can also lead to serious difficulties. Given that the environment is semi-arid, with its attendant soil characteristics, heavy flooding can cause extensive damage through rapid run-off from compacted soils leading, as it did in September 1969, to widespread structural damage to roads and buildings. Heavy rainfall and attendant flooding also cause severe erosion, particularly on hill slopes. Apart from direct damage to crops that have been planted, heavy rainfall in autumn can sometimes seriously delay ploughing and preparation of land for sowing.

To be more specific, in relation to the actual damage that can be caused in a winter of bad weather, which includes not just heavy rain, but strong winds and hailstorms as well, a report by the CRDA (Monastir) may be cited (CRDA Monastir 1978). In this, it is reported that in the winter of 1977/78, there was a general bad effect on agriculture, particularly culture maraîchère, due to the adverse conditions. The colder, wetter weather gave rise to an increase in plant diseases,

and problems with germination of certain intensively cultivated crops (primeurs). Wide areas of crops were flattened by two days of hailstorms in January. In all, 80% of the tomato crop, 25% of the pimento crop, and 10% of the courgette crop was lost. In addition, strong winds blew flowers from fruit trees, thus reducing the fruit crop, and a number of large plastic greenhouses were destroyed.

The overall effect of climatic fluctuations in the region is perhaps best summarised as follows:

> 'La vie de la Steppe et du Sahel est faite de ces contrastes: désolation et misère, joie et richesse; mais elle est faite surtout d'années passables ou médiocres, les plus nombreuses, pendant lesquelles on vivote: il y a peu de céréals mais le bétail est en bon état ou inversement les oliviers ont une récolte passable et l'huile ne sera pas trop chère. Mais toujours on attend avec angoisse la fin de l'année agricole au bout de laquelle il y aura la misère ou un peu d'oppulence'.
>
> (Despois 1955, p.44)

5.4 Hydrology

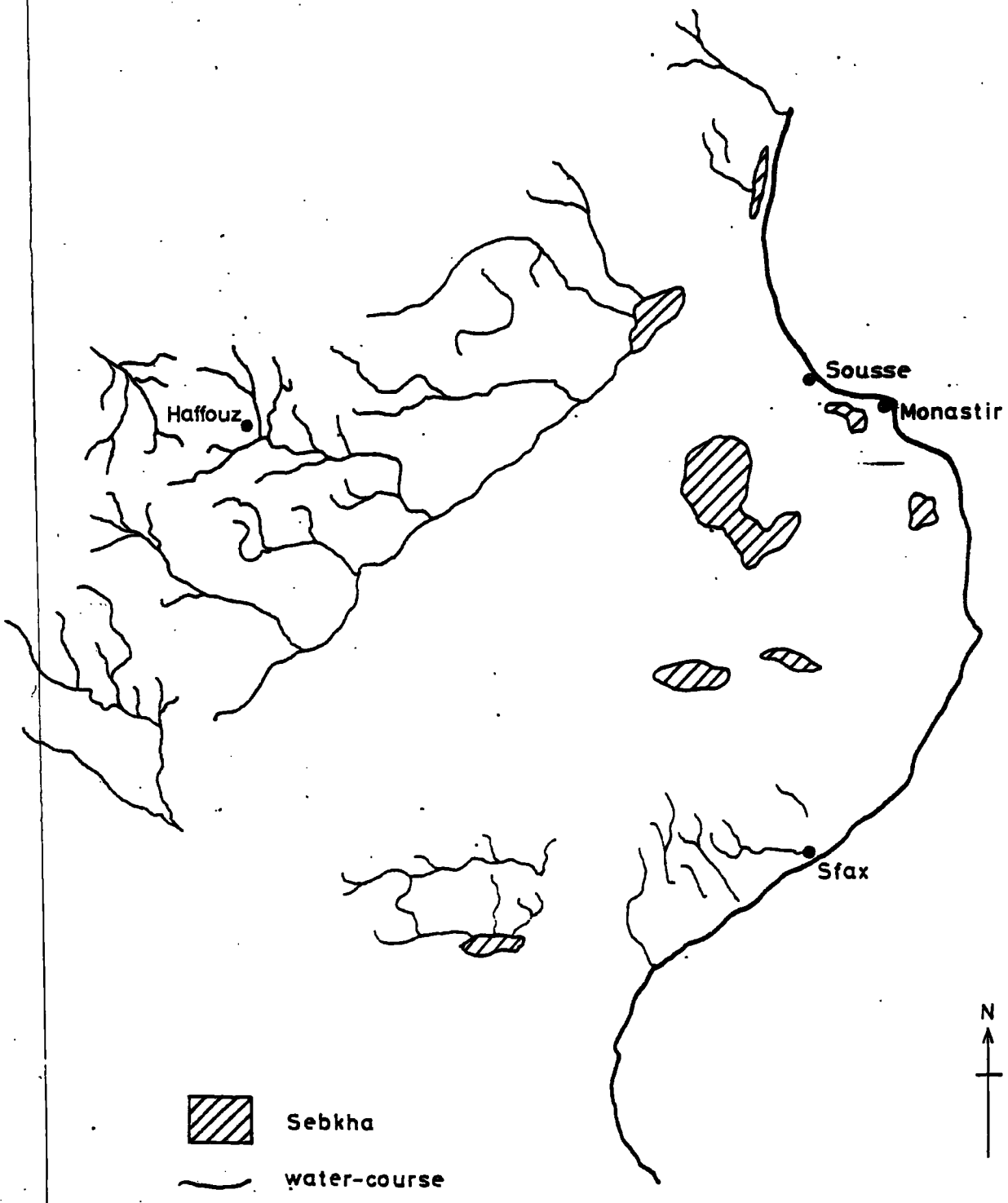
In the light of the importance of water to the region, it is valuable to examine in greater detail the hydrological resources in relation to their utilisation in order to assess long term potentials.

5.4.1 Surface Water

In the above section describing the structural geology of the region, the positive Sfax - Kerkennah Pelagian block was mentioned. As shown in figure 5.8, this has a very marked effect on surface drainage of the southern Sahel and low Steppe. With the exception of short, localised water courses such as those dissecting the slopes of the anticlines, surface water in the Monastir region is confined to sebkhas. Admittedly, none of the water courses illustrated in figure 5.8 are perennial but they do provide potential sources of water, albeit very

Fig 5.8

HYDROGRAPHIC SKETCH OF SAHEL
showing effects of the Sfax positive shelf



Source: Burollet 1967 p.57

limited. There are no marked drainage basins in the area and the réseau hydrographique is hardly developed. With the exception of a few short wadis on the slopes of the anticlines, there are no major permanent water channels. Most rain water flows into a sebkha where it rapidly evaporates.

5.4.2 Subterranean Water

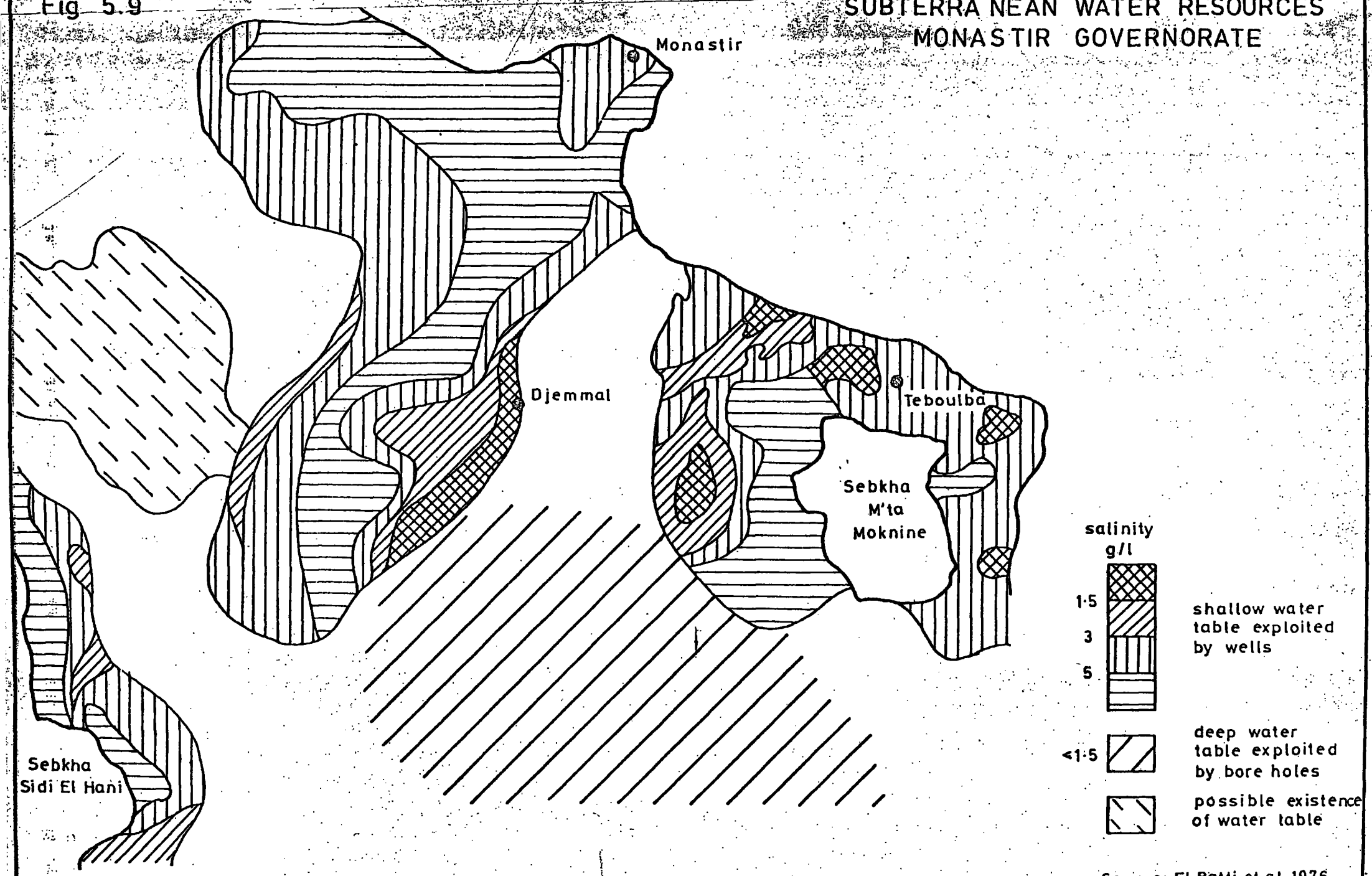
The lack of a sophisticated drainage network has important implications for the subterranean water resources of the region. In the vicinity of Haffouz (figure 5.8) it will be noted that many water courses converge. Lying under the ground in this vicinity is a major nappe phréatique, exploited for water which is supplied to Kairouan and much of the Sahel. Partly because no such water network exists in Monastir, subterranean water resources of the region are of an inferior quality.

This does not imply, however, that the ground water supply in Monastir is not important. Total exploitable potential subterranean water resources in Monastir governorate are estimated at 14.9 million m^3/year (CRDA Monastir 1977, Kraiem 1978). This water is used almost exclusively for agriculture, given that on average its salinity is over 1.5 g/l, and therefore not particularly suitable for human consumption. The nappes themselves are extensive in area, but unfortunately as illustrated in figure 5.9, most of the water has a salinity greater than 3 g/l and is therefore of restricted use for agriculture.

There are two types of subterranean water in the region, that from nappes phréatiques and that from nappes profondes. Nappes phréatiques are the shallower of the two, lying at depths no greater than 50m, and found predominantly in the superficial quaternary deposits, although occasionally extending to

Fig 5.9

SUBTERRANEAN WATER RESOURCES
MONASTIR GOVERNORATE



Source: El Batti et al 1976

miopliocene strata. It is these nappes that are favoured and sought after by farmers, being tapped by surface wells. The nappes are themselves fed primarily by infiltration alone, and only on the edge of the Djemmal plain do wadis have any feeding role. Water quality in these nappes is often mediocre. Salinity is predominantly 3g/l or more; zones where salinity is 1.5g/l or less are rare and tend to correspond only with zones d'alimentation.

The most important nappe phréatique of the area is in the Ksar Hellal - Bekalta area. This nappe is characterised by a series of small pockets of high quality water (salinity 1 - 3 g/l) and has a long history of exploitation for irrigated farming. In the Teboulba region alone there are almost 1000 wells irrigating 200ha of land (Ben Amour 1979, Batti 1979). On average, some 1.5 million m^3 of water a year are taken from the Teboulba area, and a further 600,000 m^3/year from around Ksar Hellal, and 1.5m m^3 from the area around Moknine. The Bekalta pocket contributes some 400 - 500,000 m^3/yr.

The other major nappe phréatique is that of the Djemmal - Bembla area. Again, small pockets of high quality water exist (salinity c 2 g/l) but, on the whole, salinity in the plain itself is c 3 g/l. Some 400 wells tap this nappe for both agricultural and domestic purposes.

The only other nappe phréatique of note is that which underlies the Monastir peninsula. Most of this nappe is infiltrated by the Sebkha de Skanès and much of the water is of a poor quality (3 - 5 g/l). However, approximately 400 wells exist, although only approximately 50% are now actually utilised.

There are, however, a number of problems associated with the nappes phréatiques, the most serious of which is over-exploitation. The nappes of the Sahel have a long history of

exploitation, and given increases in population and demands for food, plus an extension of irrigated farming, exploitation has increased substantially. Nappes represent finite resources and in the light of the low rainfall of the region, plus the fact that topping up of the nappes depends solely on infiltration, the area is rapidly approaching a crisis point. One of the most serious immediate threats is related to the fact that many of the nappes are situated close to the sea, to sebkhas, or to both. Consequently, with over-exploitation there is a high risk of salt water infiltration.

The case of Teboulba nappe illustrates the problem of over-exploitation well (Batti 1979). Infiltration rates to this nappe equal 650,000 m^3/yr. However, since 1941, exploitation has exceeded this, and in 1978 one estimate puts exploitation at between 1.5 million and 2.0 million m^3 (Ben Amour 1979). Not only has the level of the nappe dropped by some 15m since 1941, but the area of water of less than 4 g/l has been reduced significantly due to encroachments of water from the sea and the Sebkha M'ta Moknine.

As this nappe is particularly important in terms of the number of people and the large area of irrigated land that is dependent upon it, a major effort has been undertaken by the Tunisian government, in conjunction with the UN, to recharge the nappe. Using a mathematical simulation model, it was estimated that 500,000 m^3 of water injected yearly over a period of five years into 15 wells at the centre of the nappe where salinity was lowest would extend the area of exploitable water. If followed by subsequent 'topping up' of 250,000 m^3/yr, this would enable almillion m^3 of water to be taken out per annum. The water to be injected would come from the Nebhana dam, a pipeline from which runs through the Teboulba area, and would be fed in during the winter months of November - February, when surplus water was available from

the Nebhana reservoir. The reality of the project turned out to be far removed from expectations. In the five-year period 1972 to 1977, only 200,000 m^3/yr were pumped into the nappe. This has been due to a number of factors:

- weak absorption capacity of strata in well areas;
- difficulties in persuading farmers who own wells which already tap good quality water to allow water to be pumped down them;
- a number of below-average rainfall years that have not provided a full surplus of water from Nebhana.

However, the limited amount of 'topping up' that has taken place has enabled several wells previously abandoned to have been brought back into use. It is essential, though, that water continues to be pumped into the nappe in order to preserve its importance as a water supply and that exploitation be stabilised.

It has to be noted, though, that not all nappes can be topped up; either geological formations make it impossible or other difficulties make it impractical. Nevertheless, over-exploitation is a real problem in virtually all the nappes of Monastir governorate, and so a number of other measures to safeguard the water supply must be implemented. The kind of measures that the CRDA should be thinking in terms of are:

i) careful monitoring of nappe exploitation, which does not exist at the moment;

ii) a move away from the trend of increasing the number of electric or diesel water pumps;

iii) continuation of artificial recharging of nappes where possible;

iv) where over-use has already created serious deficit situations, or where salinity is increasing due to sea or sebkha

water encroachment, périmètres de protection, where water exploitation is closely monitored and controlled, or périmètres interdits, where all water exploitation is banned for a limited period, should be established;

v) attempts to improve feeding of the nappes should be made. Given that infiltration is the major mode of supplying the nappes with water, measures such as encouraging ploughing at right-angles to water flow or the construction of small banks or dykes would help increase rates of infiltration (and, incidentally, also help to reduce erosion);

vi) finally, traditional techniques, such as the use of meskat (small reservoirs, built by individual farmers on their own plots of land for the retention of rain water) should be encouraged and extended by regional authorities.

The area known as the Dôme de Zeramdine corresponds with the one nappe profonde in the governorate. Nappes profondes lie at depths more than 50m, and that of the Zeramdine - Beni Hassen area is situated in the sandy beds of the Vindobonien. Given its depth, the water of this nappe has to be tapped by forrages - expensive to sink, and costly to maintain. Water quality in this nappe is good - averaging less than 3 g/l and its total resources are estimated at 3.6 million m^3/yr.

Despite its potential wealth of water, exploitation has declined since 1974 (table 5.4).

Table 5.4 Exploitation of the Nappe Profonde, Dôme de Zeramdine 1974 - 78 (million m^3/p.a.).

Total Potential Annual Resources	Actual Exploitation				
	1974	1975	1976	1977	1978
3.6	2.88	2.6	2.43	2.14	1.4

This is due primarily to the fact that a number of forages are old and have been abandoned because of the expense of refitting them. It should, however, be the responsibility of SONEDE to develop these deep wells - a responsibility which they have not fully undertaken. There is, therefore, substantial room for expanding the exploitation of the nappe profonde de Zeramdine.

5.4.3 Imported Water

The sum of potential subterranean resources in the governorate is 14.9 million m^3/year. Most of this water is used for irrigated agriculture. The estimated sum of all needs in the governorate in 1977 was as indicated in table 5.5.

Table 5.5 Estimated Water Requirements
Monastir Governorate 1977.

		million m^3
Domestic	connected	3.06
	unconnected	11.3
Industrial		.57
Tourism		.57
Agriculture		7.0
	Total	22.23

Source: CRDA 1977.

This leaves a difference of 7.4 million m^3, a deficit that has to be met through the import of water from outside the governorate. There are two major sources from which this water comes - the Kairouan plain and the Nebhana dam. (In considering this external water supply, one has to look at the Sahel as a whole).

Beneath the plain of Kairouan lie a number of extensive nappes (profondes and phréatiques) of high quality water (< 1 g/l). Since 1897 this water has been piped to the Sahel where it was initially distributed solely to large towns. Since the pipes were first laid, the distribution network has been expanded to feed all population agglomerations throughout the Sahel, as well as the growing tourist industry and new factories. Basically, there are four nappes which are tapped in the plain (table 5.6)

Table 5.6 Subterranean Water: Kairouan Plain

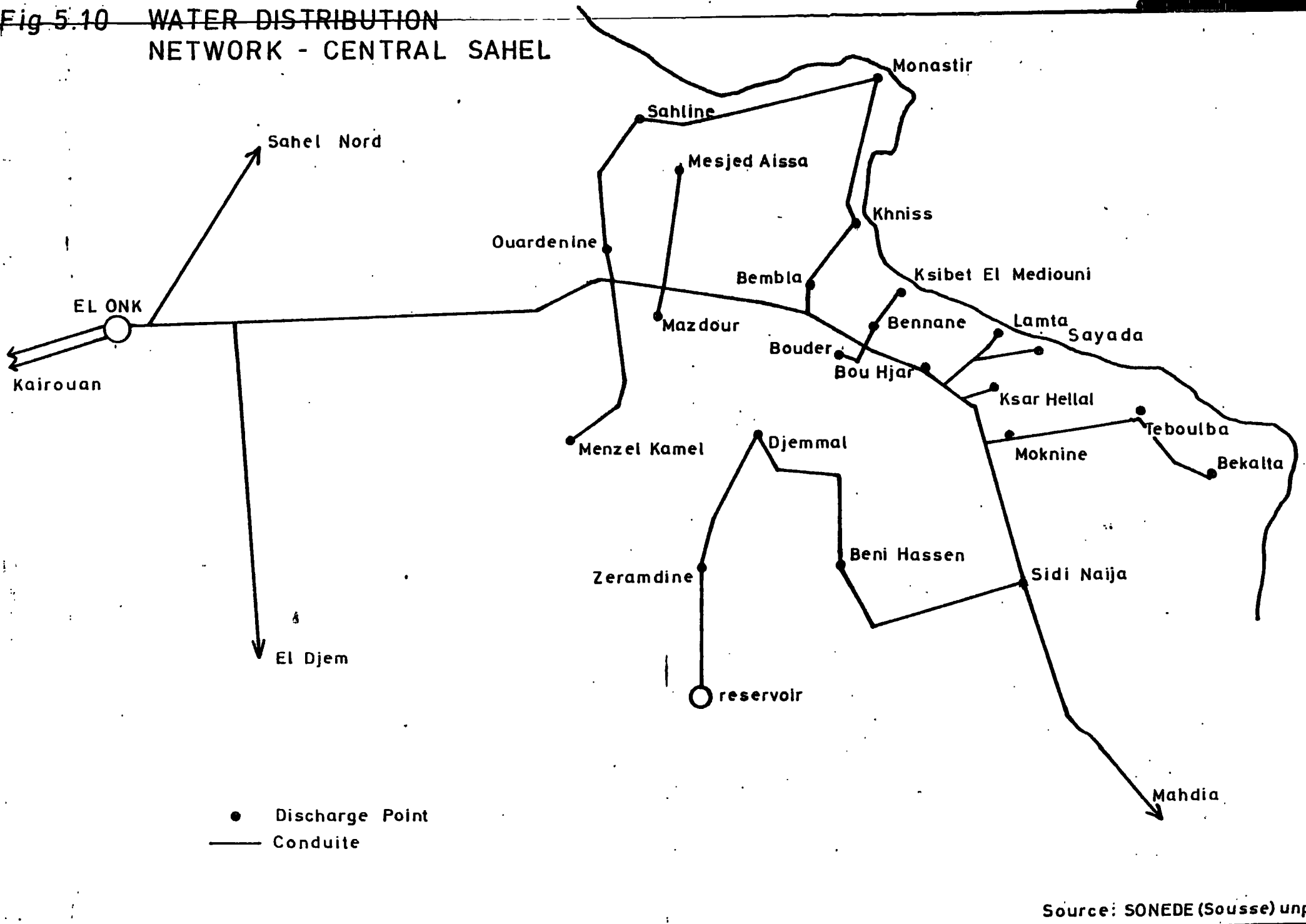
Nappe	Exploitation 1978 l/s	Potential l/s	Surplus l/s
Bou Hafna	490	300 permanent (500 if over-exploited)	10
Haffouz	25	100	75
Cherichira	70	100	30
Kairouan	120	200	80
Total	705	900	195

Source: Hamza 1979.

which have a maximum (including the over-exploitation of Bou Hafna) of 900 l/s (82,000 m^3) a day.

From the Kairouan plain, the water is piped, via Kairouan, to a large covered reservoir at El Onk (figure 5.10). From El Onk (capacity 9000 m^3) the network divides into two - one section feeding Sahel Nord, and the other Sahel Centre and Sud. The system of distribution basically involves feeding a number of small reservoirs at individual settlements which act as flow

Fig 5.10 WATER DISTRIBUTION NETWORK - CENTRAL SAHEL



Source: SONEDE (Sousse) unpubl.

regulators coping with changes in demand throughout each day. These reservoirs in turn feed water to both individual households and to public water points. In Monastir governorate, all population agglomerations have at least one public water point supplied by water from Kairouan, and most have at least some houses with individual water supplies.

Although this is the most significant source in the Sahel, it must be emphasised that it does only have a maximum output of 900 l/s and by 1980 this was being fully exploited. However, a further 100 l/s can be (and frequently is) taken from the Nebhana water distribution network (See Chapter Eight).

To summarise, the water resources available in Monastir governorate can be listed as follows (table 5.7).

Table 5.7 Water Resources
Monastir Governorate 1978

	Actual Exploitation (million m^3/yr)	Maximum Potential (million m^3/yr)
Nappes phréatiques	12.0 (1)	11.3
Nappes profondes	1.4	3.6
Nebhana	7.4	7.4
Kairouan plain	7.5	7.5
Total	28.3	29.8

(1) Over-exploitation, particularly in the Teboulba region.

Source: Batti 1979, CRDA 1977, Hamza 1979.

5.4.4. Water Requirements

Demographic increases are putting pressure on water resources in the area. In 1977, the total population of the governorate was 232000. SONEDE had supplied piped water to

25000 households serving approximately 125000 people (53% of the total population). Total water requirements of this population were 3.06 million m^3/yr. By 1981, it is estimated that the population will have increased to 260,000; that there will be 41,000 subscribers to household water supplies, thus serving 205000 people (78% of the total population) (CRDA 1977). The resultant water requirements for the household water network are an estimated 5.02 million m^3/yr, (assuming annual consumption per person of 24.5 m^3/yr). In addition to this is the remaining proportion of population which, although not served directly by private water supplies, will apply increasing pressure to public water points. All of this water will have to be of high quality (salinity < 1 g/l).

One of the features of the development of Monastir governorate has been a significant amount of industrial investment and expansion. During the period of the IV Plan, for example, 256 new industrial projects were agreed in the governorate. Although much of this industrialisation has placed no great demands on water, an annual increase in water demand for industry of 6% p.a. for the duration of the IV Plan, and 10% p.a. during the V Plan can be noted, giving a total industrial consumption of 0.57 million m^3 in 1977 and a forecast consumption of 0.84 million m^3 in 1981 (table 5.8).

Table 5.8 Industrial Water Consumption Monastir Governorate

	million m^3	% increase p.a.
1974	0.47	
1975	0.49	6
1976	0.52	6
1977	0.57	10
1978	0.63	10
1979	0.69	10
1980	0.76	10
1981	0.84	10
1990	1.47	
2000	2.61	

Source: CRDA 1977.

Another major growth sector of the governorate is the tourist industry. In 1974, the total number of guest nights at hotels in the governorate was 700000, with a total consumption of 0.40 million m^3. By 1977 this had grown to 1 million nights and a water consumption of 0.57 million m^3. It is anticipated that, by 1981, 0.75 million m^3 will be needed to serve 1.2 million nights. An important point to note here is the fact that all the water for the hotels, including that which is used for irrigating the extensive gardens, is high quality, < 1 g/l water imported from Kairouan. No attempt has been made to either:i) exploit slightly more saline water from local nappes (the nappe in the region of Sahline, to which the hotels are very close, is the only under-exploited nappe of the governorate), or, ii) use for garden irrigation, treated dirty water from the hotels.

The changing requirements of the agricultural sector are slightly more complex. As of 1977, 2400 ha of land were irrigated in the region, of which 2000 ha were supplied with Nebhana water. The Nebhana irrigated areas are fixed, or at least represent a closed system. Should any expansion of these take place, it will be on the sole basis of better utilisation of the fixed supply of Nebhana water to the governorate, which averages 7.4 million m^3/yr. The other 400 ha are fed by subterranean water and use 2.4 million m^3/yr. Despite above comments relating to the rate of exploitation of these nappes, it is expected that by 1981 the irrigated area (non-Nebhana) will have increased to 1000 ha. This is not as unrealistic as it sounds, given i) the willingness of farmers to pay SONEDE prices for water because intensive irrigated farming is proving so lucrative, ii) the encouragement by the CRDA and the PD of serriculture expansion and iii) the new job opportunities associated with the expansion of irrigated agriculture. It

does mean, however, that a further 3.6 million m^3/yr of water will have to be found by 1981.

In addition to specialised intensive irrigated farming, approximately 11.3 million m^3 are used each year, primarily from subterranean water supplies, for the general rural sector. This includes water for traditional agriculture, animals and the 'dispersed' population of the governorate. No increase in demand is envisaged in this sector (table 5.9).

Table 5.9 Summary of Water Requirements Monastir Governorate 1977 - 81.

Sector	1977 (million m^3)	1981 (million m^3) (estimated)
Domestic (connected)	3.06	5.02
Rural general	11.30	11.30
Industry	0.57	0.84
Tourism	0.57	0.75
Specialised agriculture	9.80	13.40
Total	25.03	31.31

Source: CRDA 1977

This compares with a maximum potential supply of :

Table 5.10 Maximum Potential Water Supply (Monastir Governorate 1981

	million m^3
Nappes phréatiques	11.3
Nappes profondes	3.6
Nebhana	7.4
Kairouan	7.5
	29.8

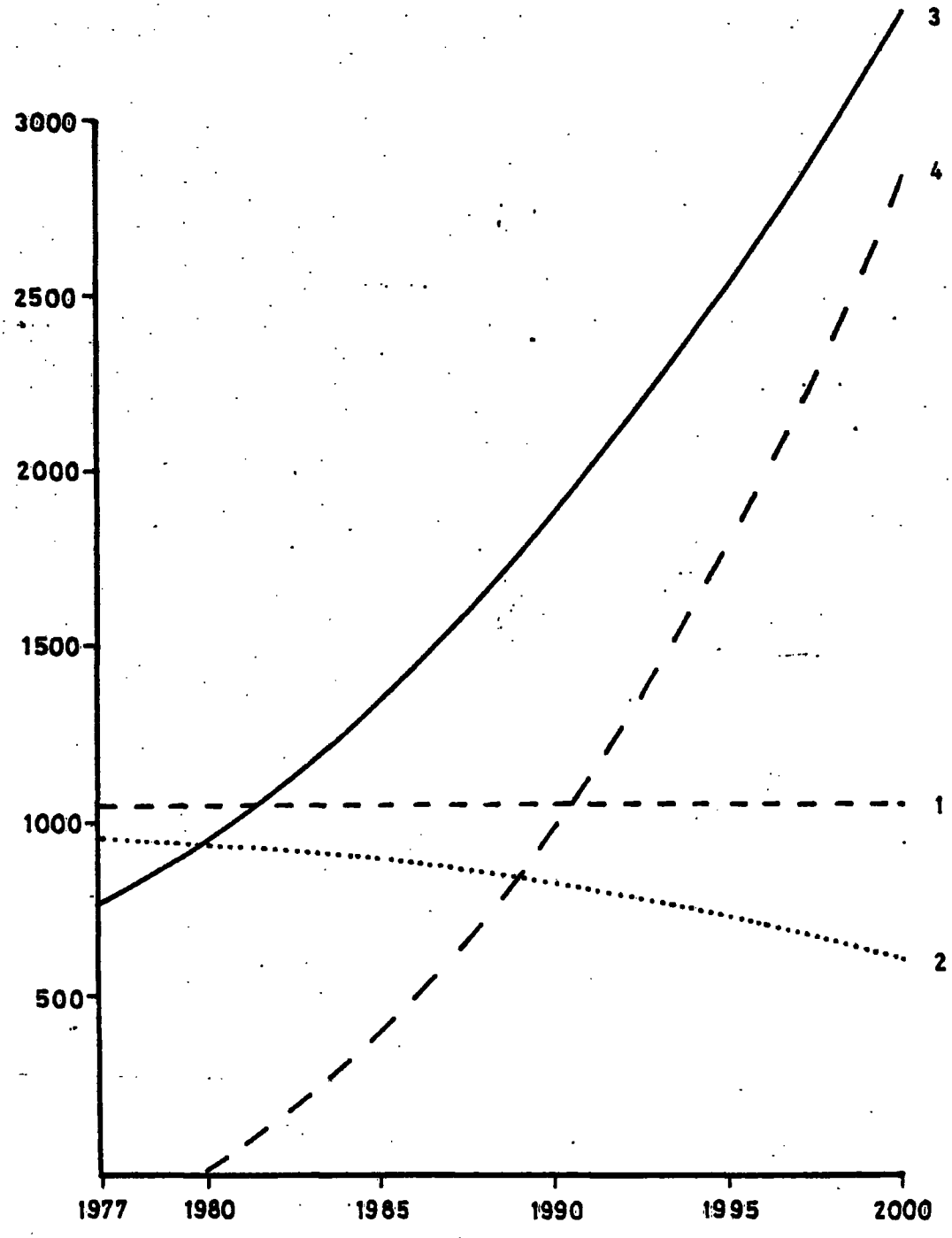
Source: CRDA 1977

Therefore, by 1981, the governorate will have a water deficit of 1.5 million m^3, and this deficit will only increase over time. To give an indication of the anticipated increase in demand for water, figure 5.11 shows estimated change in water demand for the whole Sahel. This line excludes rural demands from subterranean water resources and the Nebhana water scheme. The graph also gives an idea of estimated non-rural demands for Monastir governorate. Water available from the Kairouan plain (including the supplementary 100 l/s from the Nebhana pipe line) will stay fixed over time at 900 l/s. However, water available to the Sahel from this source will decrease, owing to the increasing requirements of Kairouan itself. The expected water available at El Onk is therefore plotted. It will be noted that from 1980 onwards, a deficit will exist in the Sahel and that remedies are urgently required.

The Tunisian government does have a number of schemes aimed at meeting water needs up to the year 2000. The most important of these is the Sousse Nord project. This is a major scheme, costing 50m TD which will pipe water from the barrage Sidi Bou Salem in the Medjerda valley, via Cap Bon, to the northern parts of the Sahel. However, although it is anticipated that this will eventually provide a maximum 1500 l/s and will be adequate to meet the needs of the Sahel until the year 2000, it will not be available until 1986 at the earliest. It is therefore the years 1981 - 1986 that will prove the most difficult. SONEDE hope that the deficit of these years can be met through increasing the exploitation of the Sisseb nappe close to the Nebhana dam. Some Sisseb water is already used to supplement Nebhana water. It is planned, though, to sink another eleven bore-holes, the water from which will be pumped into the existing Nebhana network and then removed for

Fig 5.11

SAHEL WATER RESOURCES AND REQUIREMENTS 1977-2000



1 Maximum potential output from Kairouan Plain

2 Total resources available at El Onk

3 Total requirements of the Sahel

4 Maximum potential output from the Eaux du Nord project (only unspecified proportion available for Sahel)

Source: unpub. SONEDE data

filtering at Oued Harkoussia. Sisseb has a potential 300 l/s of water of < 1 g/l, or 500 l/s of slightly inferior quality. It is intended to limit exploitation to 300 l/s in order to prolong the life of the nappe. Sisseb water will supply only Monastir and Maatmar in Monastir governorate. However it is expected that 300 l/s to Sousse governorate from Sisseb will release Kairouan resources for the central and southern Sahel.

In addition to these major schemes, two other measures that would help increase water potential and ease the shortages in the Sahel have been noted (Hamza 1979). The first would be to construct retenues collinaires in the Sahel at two possible sites; one between Akouda and Kalaa Kebira in Sousse governorate and the other near Bennane in Monastir governorate. It is difficult, though, to see how the expense involved in such measures, compared to the relatively small amount of water that would be yielded, could be justified. The main argument in their support is that they will increase infiltration of local nappes. A second, and much more realistic measure, is to develop the recycling of water, particularly in the hotel areas. Two recycling stations already exist, one in Sousse Nord which will be recycling 10,000 m^3/day of hotel and domestic water by 1981 and 13,000 m^3/day by 1986; the other, in Sousse Sud, recycles industrial and hotel water. It is estimated that capacity at this plant will reach 21,000 m^3/day by 1991 (compared to 15,000 m^3/day 1981). Finally, a new recycling station will be opened in Monastir by 1981. This will have a maximum capacity of 6,400 m^3/day to be achieved by 1986, and will recycle just hotel water.

In support of such schemes there is a definite need for more positive direction and work from the governorate authorities, particularly SONEDE and the CRDA, to encourage better management of water resources. This is particularly

true in the rural/agricultural sector, where broken pipes and irrigation channels, inefficient use of small reservoirs and pumps left running for longer than necessary, are all very much in evidence. Extension work and grants for infrastructural materials, such as Bauer pipes and plastic lining for water tanks, would perhaps help this.

Finally, it could be suggested that the price of piped water supplies be increased. As of 1979, household water supplies cost 68 millimes per metre ^{3}; average domestic consumption is 24.5 m^3/yr/person, and given an average household of five people this leads to an annual water bill of 7.270 TD. In the light of the scarcity of the water resources, increases in the price of water could justifiably be made. There is also scope for differential rates to apply to domestic, agricultural and industrial consumers.

5.5 Population

Population data relating to the governorate are derived from statistics published in the national decennial census. Problems of temporal comparisons exist, owing to changes in definitions and enumeration district boundaries. In the 1966 census, for example, most statistics relate to population present, whereas the 1975 census relates to resident population. Boundary changes in Monastir are also significant. In 1966 the present Monastir governorate was a part of Sousse governorate. It was created in 1974 from the four delegations of Djemmal, Monastir, Ksar Hellal and Moknine. These in turn have subsequently been sub divided (table 5.11). Despite difficulties associated with these changes, a number of inferences may be drawn from available data.

Table 5.11 Boundary Changes
Monastir Governorate

1966 Delegations	1974 Delegations	1978 Delegations
Djemmal	Djemmal	Djemmal
	Zeramdine	Zeramdine
Monastir	Ouardenine	Ouardenine
	Monastir	Monastir
		Ksibet El Mediouni
Ksar Hellal	Ksar Hellal	Ksar Hellal
Moknine	Moknine	Moknine
	Teboulba	Teboulba
		Bekalta

5.5.1 Demographic Characteristics

In 1975, 223,150 people were recorded resident in Monastir governorate (224,236 present). This represents 4.0% of the total Tunisian population, living in 0.5% of the total land area. Monastir is therefore one of the more densely populated governorates (219 people/km^2 compared with the national average of 36 people/ km^2). This compares with a population present in 1966 of 177,120 and in 1956 of 148,300. The rate of increase from 1956 to 1966 was, therefore, a low 1.4% p.a. (national rate was 2.7%), which rose dramatically to an increase of 3% p.a. (of the population present) between 1966 and 1975. The national rate for this period was 2.5%. Since 1975, the rate has slowed again to approximately 2.65% p.a., leading to an estimated total governorate population of 247,000 in 1979. The slow rate of increase 1956 - 1966 can be attributed to high rates of emigration from the Monastir area to Tunis to fill the many vacancies in administration and industry created after independence (Findlay 1980). The average growth rate 1966 - 75 can be partly attributed to a reversal of this trend.

Table 5.12 Crude Birth and Death Rates
Monastir Governorate 1976 - 1978.

	1976	1977	1978
Number of births	7940	7608	7331
Crude Birth Rate ($^o/_{oo}$)	34.7	33.3	31.9
Number of Deaths	1588	1529	1526
Crude Death Rate ($^o/_{oo}$)	7.0	6.5	6.3
National CBR ($^o/_{oo}$)	36.2	36.0	34.1
National CDR ($^o/_{oo}$)	8.7	7.9	7.9

Source: Derived from
INS Annuaire Statistique vols. 23 and 24.

Relating crude birth and death rates provides an indication of natural rates of increase in Monastir (table 5.13).

Table 5.13 Population Natural Rates of Increase
Monastir Governorate 1976 - 78.

1976	2.7%
1977	2.68%
1978	2.56%

An indication of average household size is provided by the census. In 1975, the 223150 people of Monastir were divided into 40435 households, giving an average persons/household ratio of 5.5. There is little variation from this figure between urban and rural areas in the governorate (table 5.14).

Table 5.14 Mean Household Size Urban and Rural Areas
Monastir Governorate

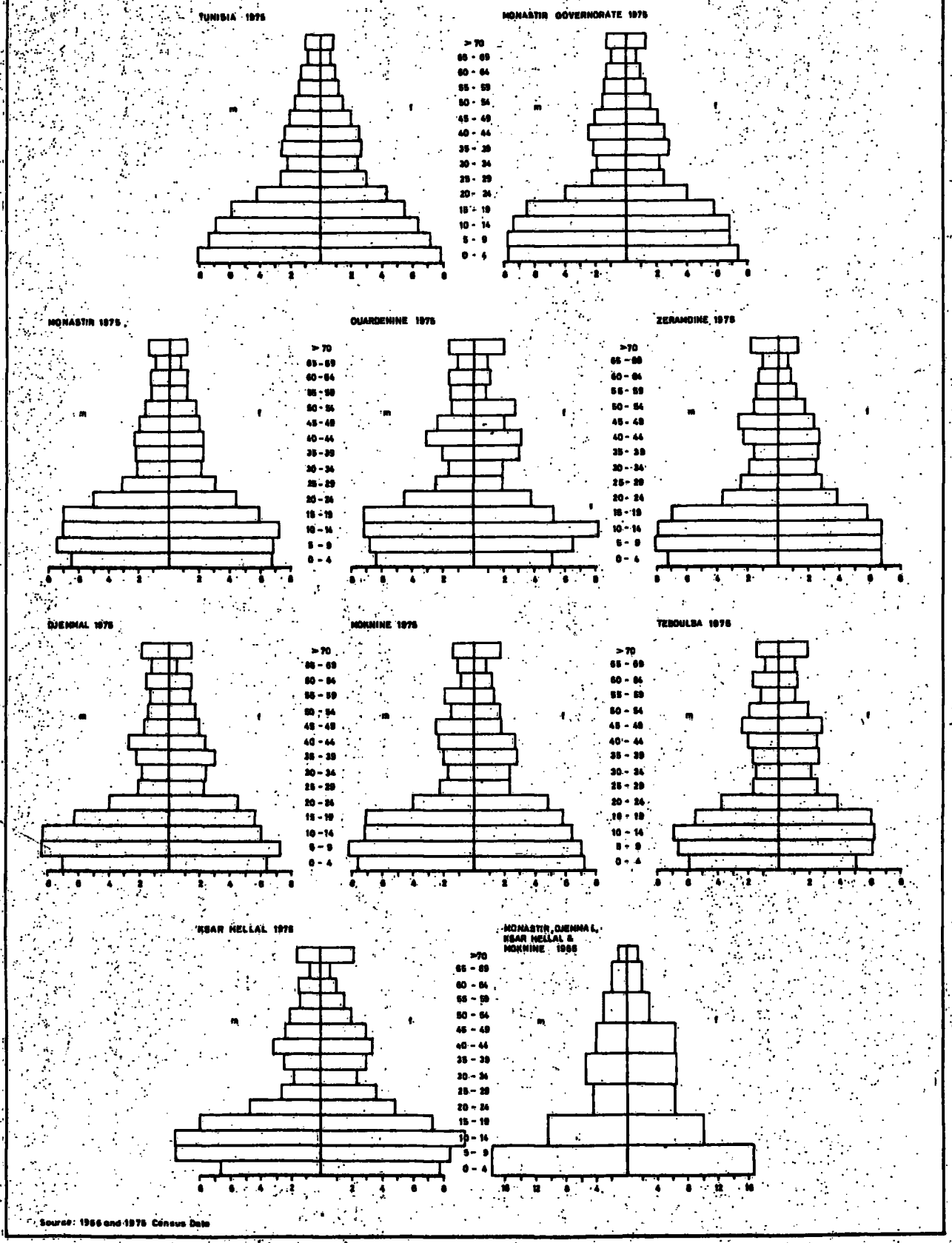
Delegation	Urban	Rural
Monastir	5.59	7.03
Ouardenine	5.43	5.44
Moknine	5.32	5.22
Teboulba	5.49	5.24
Ksar Hellal	5.71	5.94
Djemmal	na	5.43
Zeramdine	na	5.25

Source: 1975 Census.

The age structure in Monastir, 1975, is illustrated in figure 5.12. Very noticeable is the broad base to each pyramid; 56.49% of the governorate population are under 20 years old (compared to 55.21% in 1966). The effect of the declining birth rate is noticeable in all delegations, but

Fig 5.12

POPULATION STRUCTURE MONASTIR GOVERNORATE BY DELEGATION 1966 AND 1975



Source: 1966 and 1975 Census Data

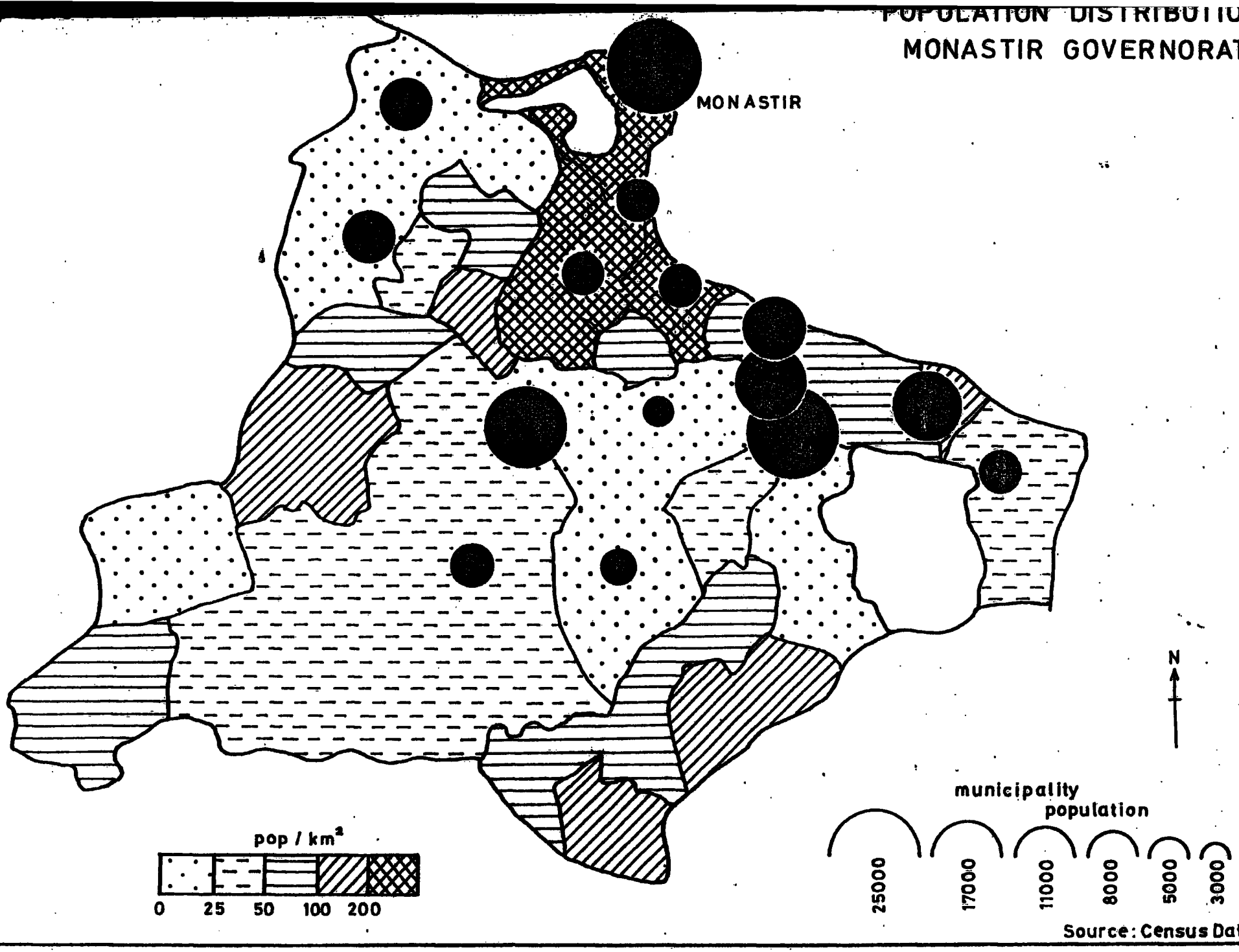
particularly in the more urbanised areas of Monastir, Ksar Hellal and Teboulba. Most interesting, however, is the phenomenon evident in all but the Monastir delegation. In both male and female sections of the population, with the exception of Monastir, indentation occurs in the 20 - 35 year old age groups. Part of this is attributable to the fact that the birth years of this group corresponds with the period of the second world war and the unsettled years leading up to independence. This does not fully account for the greater indentation in the male population, which can be explained by emigration. That Monastir delegation does not exhibit the same phenomenon is attributable to the fact that effective migration to the delegation, as will be shown below, is virtually zero.

The remaining population structure pattern is similar for all delegations, with the exception of Ouardenine, for which an extremely erratic structure may be noted which is difficult to explain.

5.5.2 Population Distribution

The distribution of population in Monastir governorate is illustrated in figure 5.13. The greatest concentration of people is in the eastern coastal delegations where population densities as high as 885 and 870/km^2 exist in the delegations of Teboulba and Ksar Hellal respectively. With an overall population density of 219/km^2, Monastir governorate is the second (to Tunis) most densly populated area in the country.

The census of 1975 groups governorate populations into


POPULATION DISTRIBUTION
MONASTIR GOVERNORATE
MONASTIR
pop / km²
0 25 50 100 200
N
municipality
population
25000
17000
11000
8000
5000
3000
Source: Census Data 1975

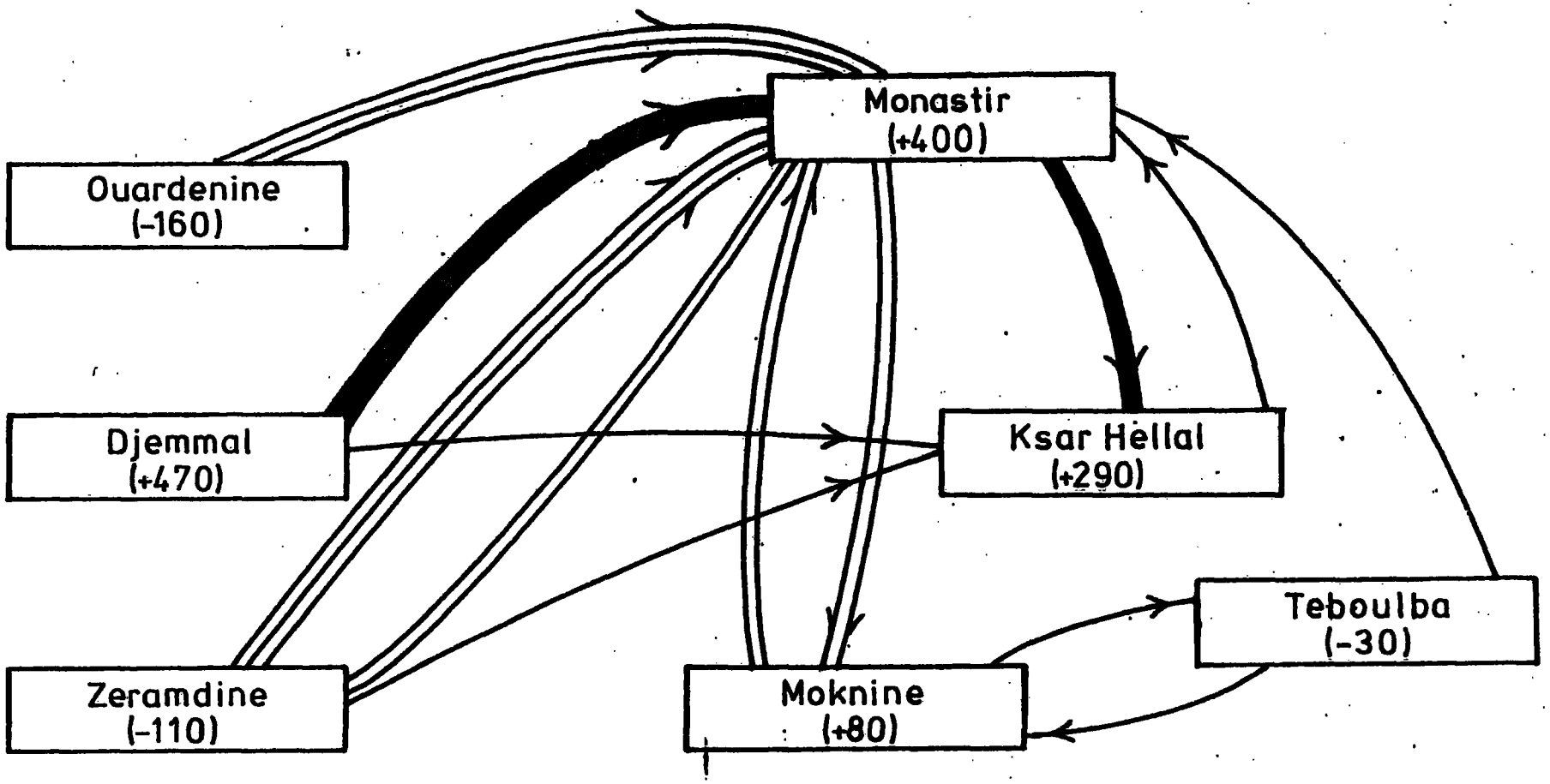
three categories; communes, agglomérées and isolées. In effect, communes correspond to the large villages and towns and the population agglomérée and isolée is the rural population. In 1975, 76.7% of the governorate population resided in communes, making Monastir the second most urbanised governorate of Tunisia. However, this gives a misleading impression. Closer examination of the data reveals that of the 15 communes in Monastir, only six have populations greater than 10,000, and one of these six is an agglomeration of three settlements (these six account for 52% of the total population). Five of the communes have populations less than 6000 (table 5.15). Monastir governorate is not so much an urban governorate as a region of large villages.

Table 5.15 Communes, Monastir Governorate 1975

Commune	Population Resident	% Total Population
Monastir	26759	12.0
Moknine	26035	11.7
Djemmal	19187	8.6
Ksar Hellal	18588	8.4
Teboulba	14284	6.4
Sayada, Lamta, Bou Hjar	12332	5.5
Sahline, Sidi Ameur, Maatmar	8476	3.8
Ouardénine	7833	3.5
Zeramdine	6751	3.0
Bekalta	6453	2.9
Bembla/M'Nara	5910	2.7
Ksibet El Mediouni	5446	2.4
Khniss	5418	2.4
Beni Hassen	4622	2.1
Touza	3375	1.5
Total	171519	76.9

Source: 1975 Census.

Fig 5.14 SCHEMATIC REPRESENTATION OF MIGRATION FLOWS WITHIN MONASTIR GOVERNORATE 1969-1975



All flows >50 people over the five year period are shown

Bracketed figures indicate net movement

50 - 99
100 - 149
150 - 200
>200

Source: Census Data

5.5.3 Migration

Relative proportions of population resident in communes, agglomerations and isolated areas has changed little between 1966 and 1975 (table 5.16). There have, however, been significant movements of population both within the governorate and between Monastir and other governorates. In the period overall, between 1966 and 1975, there has been a net migration from Monastir of 11530 people (Triffa undated). The destination for most of the 27040 emigrants of this period was Tunis; immigrants came primarily from the Sahel (Kairouan, Mahdia and Sousse) although a significant proportion did come from Tunis.

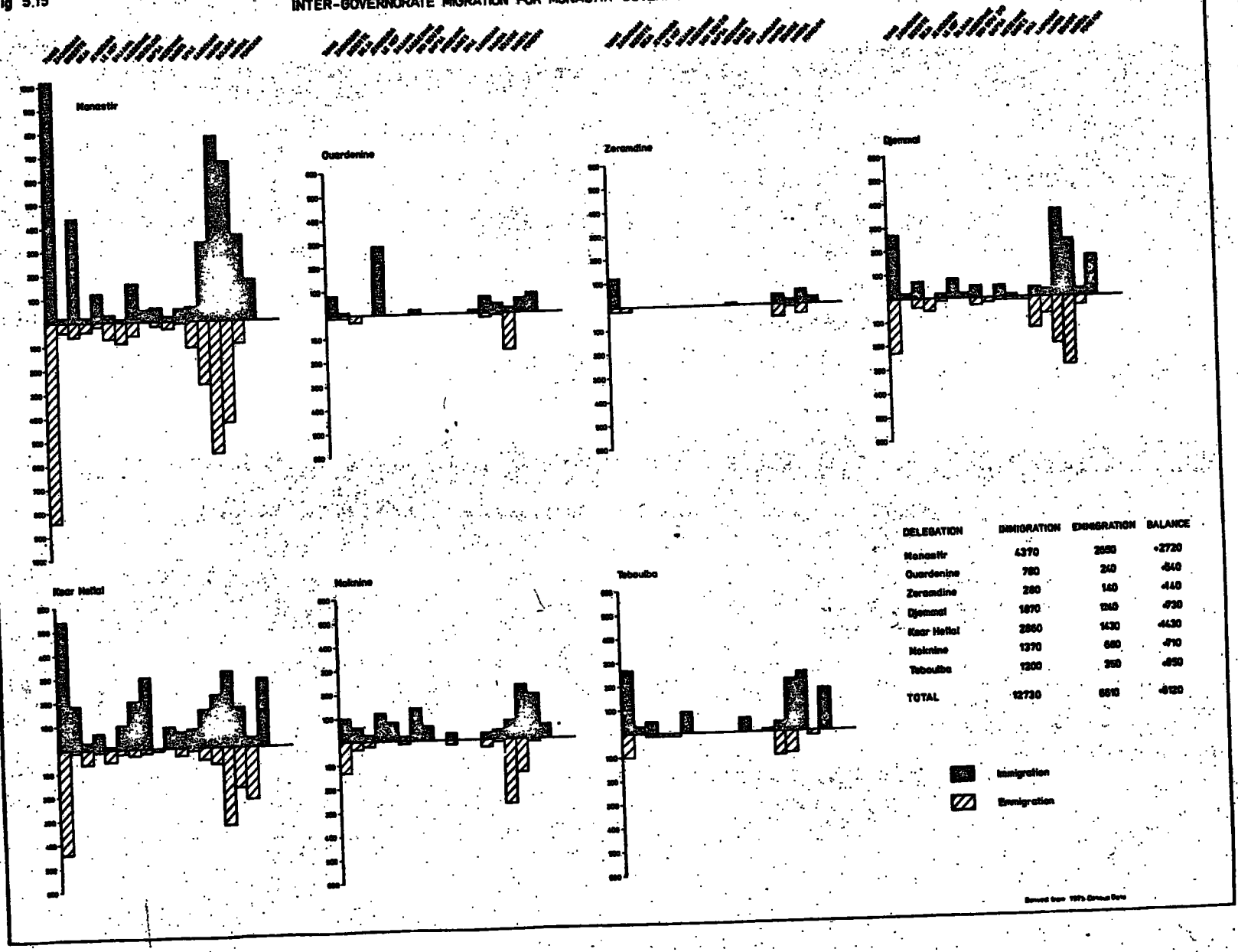
Table 5.16 Urban and Rural Population
Monastir Governorate 1966 and 1975

	1966		1975	
Area of Residence	No.	%	no.	%
Commune	131320	76.5	171519	76.9
Agglomeration	22355	13.0	34017	15.2
Isolated	18011	10.5	17614	7.9
Total	171686	100	223150	100

However, on the basis of calculations utilising 1975 census data, it is clear that since 1969 there has been a reversal to this trend. Net migration is now positive, and in the region of 7120. Net migration by delegation over this period is illustrated in figure 5.14. Monastir delegation is clearly the most dynamic area in terms of population movement, with 4370 immigrants and 2650 emigrants. Ksar Hellal and Moknine, the other predominantly urban delegations, come second and third respectively. Origins and destinations of migrants external to the governorate are illustrated in

Fig 5.15

INTER-GOVERNORATE MIGRATION FOR MONASTIR GOVERNORATE - BY DELEGATION 1969-1975



DELEGATION	IMMIGRATION	EMMIGRATION	BALANCE
Monastir	4370	2650	+2720
Ouerdenine	780	240	+540
Zeramdine	280	140	+140
Djemmal	1870	1240	+730
Ksar Hellal	2860	1430	+1430
Moknine	1370	660	+710
Teboulba	1200	350	+850
TOTAL	12730	6610	+6120

Immigration

Emmigration

Source from 1975 Census Data

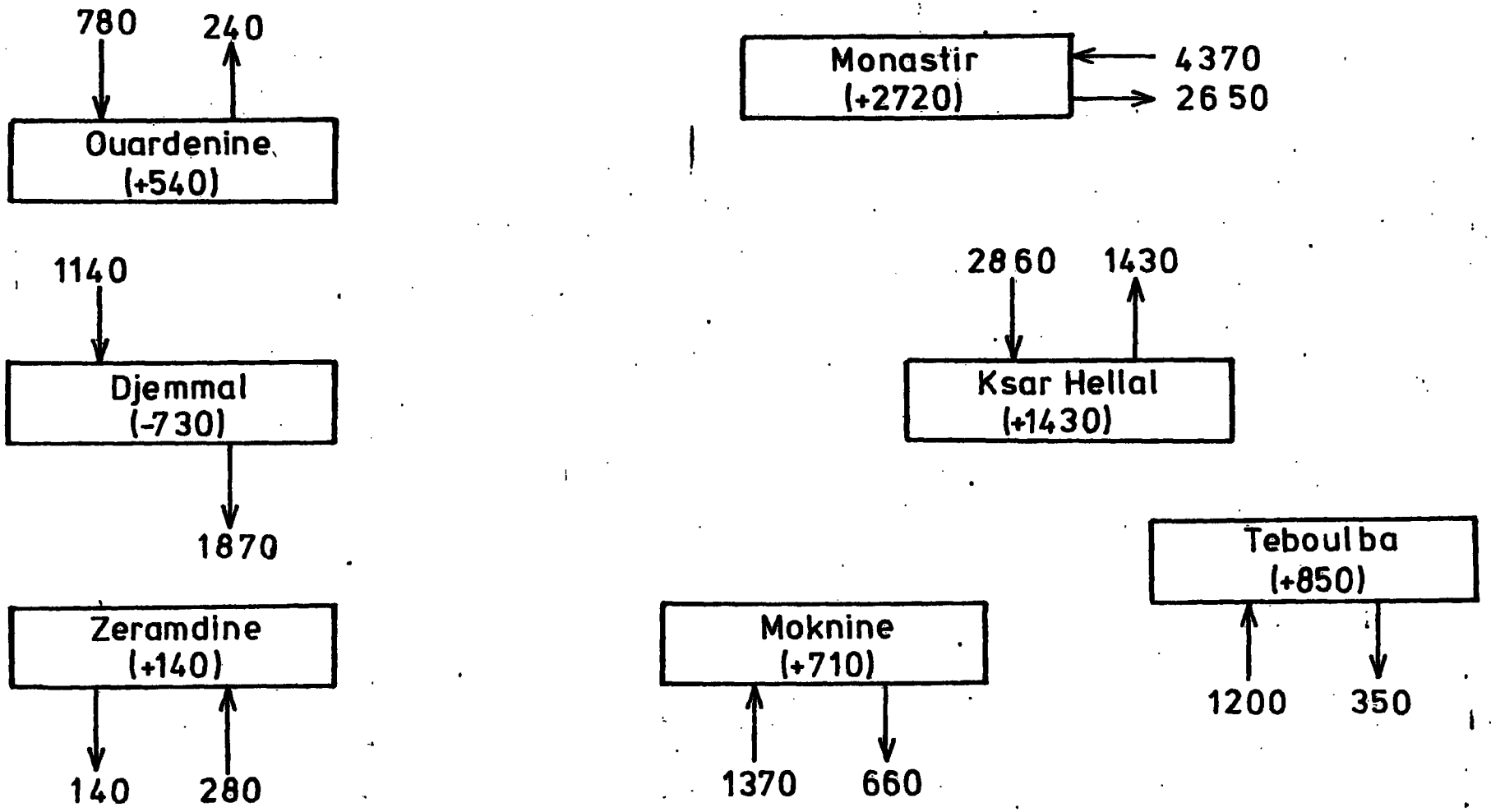
figure 5.15. As expected, greatest population movements are between Monastir and the other Sahel governorates and between Monastir and Tunis. There is a close relationship between immigrant and emigrant flows.

The trend of Monastir becoming an area of immigration is elaborated elsewhere (Findlay 1980). Findlay demonstrates how the pre-1974 Sousse governorate area has become an area of net immigration. Two major reasons are propounded for this - the increasing social and economic congestion of Tunis, thus reducing its attractiveness as a destination for potential migrants; and the decentralisation policy of the Tunisian government through which much investment and job creation is being diverted to the eastern littoral.

It has been suggested by Findlay that the above trend relates to Zelinsky's hypothesis of mobility transition and that the Tunisian situation corresponds to Phase III of the hypothesis (Zelinsky 1971). One of the features of Phase III is that the circulation of population increases in complexity. With the decline in the importance of Tunis as a destination point, this appears to be happening in Tunisia. A second feature is that there is a decrease in rural to urban migration. Figure 5.16 illustrates migration flows of more than 50 people within Monastir governorate between 1969 and 1975. Emigration from the three predominantly rural delegations of Ouardenine, Djemmal and Zeramdine to the urban areas is relatively strong. But, bearing in mind that each flow is the sum of five years movement, a total emigration Djemmal to Monastir of only 420 people can be considered quite low. Although rural to urban migration continues to dominate migratory movements within Monastir governorate as a whole, it is suggested that the flows are not as significant as they at one time were.

Fig 5.16 INTER-GOVERNORATE MIGRATION, MONASTIR GOVERNORATE BY DELEGATION

1969 - 1975



[Figures exclude internal governorate migration]

Source: Census Data 1975

5.5.4 Education and Literacy Levels

As this chapter is concerned with an evaluation of resources, it is not sufficient to simply analyse absolute numbers of the population; reference is also required to the quality of that population, in particular, education and literacy levels.

In 1975, 26012 boys and 18439 girls were attending primary school in Monastir. The total number of boys aged 5 - 9 that year was 17350, and the total number of girls in that age group was 15090 (Min. de l'Educ. 1978a). That there are more pupils attending primary school than there are children in the 5 - 9 age group is due to i) 5 - 9 does not exactly equate with primary school age children, but is the nearest equivalent in the census and ii) the Tunisian school organisation is based on the French system, whereby children who fail at the end of year repeat that year. Consequently, many children stay in primary school longer than the minimum period. However, the above figures suggest that a high proportion of children do attend primary school, although it must be noted that there are fewer girls than boys.

The widespread availability of education services in Monastir governorate is indicated in table 5.17.

Despite the fact that primary education is so extensive, the proportion of pupils continuing with secondary education is relatively small. This is again partly due to the requirement for children to pass exams before proceeding to the next stage, but more particularly to social and economic factors. Table 5.18 shows that just 4000 girls were in secondary education in 1977/78 (compared to the 20000 in primary education). A major contributory factor to this is that many girls are keen to join the rapidly expanding labour market which, with its predominance of labour intensive industries,

Table 5.17 Primary Education Facilities Monastir Gvt. (by delegation) 1977/78.

		Monastir	Djemmal	Zeramdine	Ouardenine	Ksar Hellal	Teboulba	Moknine	Total
No. of schools		13	13	11	9	13	9	14	82
Local classes		140	111	64	61	128	73	107	684
Higher classes		285	229	132	127	258	150	225	1406
Pupils	M	5378	4498	2681	2255	4748	2924	4744	27228
	F	4481	3298	1474	1724	3812	2264	2907	19966
	T	4859	7796	4155	3979	8655	5188	7651	47197
Teachers	M	136	138	92	68	137	95	132	798
	F	124	64	19	40	103	42	67	459
	T	260	202	111	108	240	137	199	1257
Average class size		35	34	31	31	33	35	34	34
Pupils/teacher		38	39	37	37	36	38	38	38

Source: Min. de l'Education 1978a

Table 5.18 Secondary Education Monastir Governorate 1977/78

No. of schools		9
No. of pupils	m.	7434
	f.	4024
	t.	11458
No. of teachers		570
Average pupils/class		32.7
Average pupils/teacher		20.1

Source: Min. de l'Education 1978b

particularly textiles, has a large demand for female labour. There is also a continuing attitude prevalent that there is little point in women getting more than a basic education, for it will never be of any use to them as they are destined to get married and settle down with a family.

Even though the number of boys continuing with secondary education (7500) is nearly twice that of the number of girls, compared to the number of boys at primary school (20,000) this proportion is also small. This is more difficult to explain, but is probably also due to the fact that many young men wish to get out and earn some money and are often encouraged to do so by parents. Secondary education facilities in Monastir are summarised in table 5.18.

There is a secondary school in each delegation seat, except Bekalta and Ksibet El Mediouni, with three in Monastir itself.

The consequence of the relatively accessible education facilities in Monastir is an educated population, with particularly high literacy rates amongst the younger sections of the community. In 1975, 90.5% of the population of the governorate aged 10 - 19 was literate, compared with 72.2% of those aged 20 - 29, 25% of the 30 - 39 year olds and just 12.5% of those aged over 40. Of note also were the marked differences between the male and female sections of the population and between those living in urban and rural areas; male and female literacy rates amongst those aged 10 years and over in urban areas were 68.0% and 44.9% respectively. Whereas, in rural areas, the corresponding rates were 51.9% and 21.9%.

As suggested in Chapter Three, there still remain considerable biases in the Tunisian education system toward males living in urban areas.

5.5.5 Political Awareness

In discussing the population as a resource of a region, it is also important to consider its attitudes and values. Admittedly, this is a topic on which it is difficult to generalise. Nevertheless, there is one particular aspect of the Monastir population that is distinctive and is relevant to rural development - that of its political awareness.

It is almost entirely due to the fact that the population of the Sahel has a long history of sedentary cultivation, living in small villages and closely attached to the land that the political sensitivity has arisen. In 1864, it was the population of the Sahel which rose in rebellion against the Beylical rule over the issue of increased taxes (Brown 1980). In 1934, it was at Ksar Hellal that Bourguiba (himself from Monastir) formally founded the Neo Destour Party that was to become the major voice for the independence of Tunisia. Indeed, not only is Bourguiba from the region, but many of his inner circle of advisors and ministers also came from the area.

But it is not only amongst the educated élite that the political awareness exists. Although the co-operative movement of the late 1960s was widely unpopular, the most vociferous feeling against it came from the Sahel. In fact it was from Ouardenine in September 1969 that the actual spark came which ignited the fire that destroyed the co-operatives when the village rose in a riot and the National Guard were called out and only restored order by firing at the crowd. Similarly, the riots in Tunis on January 26th 1978 can be traced back to unrest in Ksar Hellal the previous November (Bishtawi 1978).

The above incidents are cited only as examples of the

'politicisation' of the area. This political feeling is not solely directed at such 'anti' measures. It also expresses itself in every-day living. It manifests itself in a kind of pride both for the area and for the village within which an individual lives. The result of this, however, is that it creates an environment of competition where each village thinks that it is superior and more loyal to Bourguiba and the Party than is the next one. In a sense this is good, as it motivates villages to do something about themselves but it also has disadvantages:

> 'la population du gouvernorat de Monastir est très sensible a l' esprit de chapelle, chaque village se tourne le dos aux villages voisins et il était jusqu'à présent difficile d'envisager les actions faisant intervenir plusieurs villages à la fois'.
>
> (Kraiem 1979, p.5)

It could be argued that this political feeling is a manifestation of the desire for change that is visible in the region - or vice-versa. Either way, the Sahel as a whole has never been noted for its unwillingness to change or to develop. But, having said that, two qualifications must be made. Although on the whole, Sahelian society has shown that it is prepared to change and adapt to changing circumstances, both Abu-Zahra and Nassif have shown how, despite the currents of change around them, pockets of tradition have remained in various social strata and amongst various behavioural patterns, particular marriage rites. These pockets of tradition are particularly noticeable in rural areas (Abu-Zahra 1972, Nassif 1978).

5.6 Employment and Unemployment

Paucity of data restricts detailed discussions of these aspects of the Monastir population - the sole source being a 10% sample of 1975 census returns. This does, however,

provide an indication of general patterns of employment. Subsequent to 1975, the OTTEEFP have published broad estimates of employment structures and of unemployment in the region. These are unfortunately based on incomplete surveys - ie the non-compulsory registration of the unemployed with the OTTEEFP.

The most recent and available employment statistics are provided by the OTTEEFP (Min. de l' Int/Gvt. de Monastir 1979d). This report estimates that in 1979, the population active (> 15 yrs old, capable and willing to work) was 81000 (59000 men and 22000 women). This is based on the 1975 census and an estimated increased job demand of between 2000 and 2500 people per annum. It is worth noting that women are well represented in the employment structure. In effect, 30% of all women > 15 yrs old are employed. This compares with the national average of 20%.

As to actual numbers employed, it is estimated that in 1979, 73600 people were actually in work; 17000 (23%) in agriculture and 77% in other sectors (table 5.19).

Table 5.19 Employment by Sector
Monastir Governorate 1979

Agriculture	17000	23%
Industry	13000	43%
Crafts	19000	
Construction	6000	9%
Services	18600	25%
	73600	100%

Source: Min. de l'Int/Gvt. de Monastir 1979d)

Modern and traditional industry employs 43% of the total

Table 5.20 Sectoral Employment Structure Monastir Governorate 1975

	Employed			Unemployed			Total		
	Masc.	Fem.	Tot.	Masc.	Fem.	Tot.	Masc.	Fem.	Tot.
Vegetable production	8180	1540	9720	130	-	130	8310	1540	9850
Animal production	300	80	380	-	-	-	300	80	380
Agricultural related activities	120	-	10	-	-	-	120	-	120
Forestry	10	30	40	-	-	-	10	30	40
Fishing	1010	10	1020	-	-	-	1010	10	1020
Total Agriculture	9620	1660	11280	130	-	130	9750	1660	11410
Extractive Industry	530	10	540	10	-	10	540	10	550
Food Industry	410	20	430	40	-	40	450	20	470
Drink Manufacture	20	-	20	-	-	-	20	-	20
Textiles	6140	13730	19870	60	210	270	6200	13940	20140
Leather	160	50	210	-	-	-	160	50	210
Wood	650	1440	2090	20	-	20	670	1440	2110
Furniture	680	50	730	10	-	10	690	50	740
Paper	20	-	20	-	-	-	20	-	20
Total Manufacturing Industry (agric. products)	8080	15290	23370	130	210	340	8210	15500	23710
Other Manufacturing	2060	90	2150	60	-	60	2120	90	2210
Electricity, gas, water	470	-	270	-	-	-	470	-	470
Construction	5750	70	5820	270	-	270	6020	70	6090
Transport	2030	40	2070	10	-	10	2040	40	2080
Commerce, Banks, Insurance	5760	270	6030	30	-	30	5790	270	6060
Services	6510	1420	7930	100	-	100	6610	1420	8030
Other	2640	290	2930	1610	1200	2810	4250	1490	5740
Without work for the first time				3260	2010	5270	3260	2010	5270
Total	43450	19140	62590	5610	3420	9030	49060	22560	71620

Source: 1975 Census.

workforce. Amongst these industrial activities, textiles are by far the most important, employing 24000. The role of women in this textile sector is very important in that approximately 75% of the 24000 are women. Female employment in the region is thus essentially non-agricultural. It is also important to underline the fact that the average number of people employed per household in Monastir is 1.6 - this compares with the national average of 1.5 people/household.

Greater detail on the structure of employment in Monastir is provided by the 1975 census (table 5.20).

5.7 Economic Resources

5.7.1 Agriculture

Of the 97465 ha of land in Monastir, 78390 ha (80.43%) are utilised for agriculture. The remaining 19.57% is taken up by sebkhas, built-up areas and roads. In terms of resource evaluation, these relative proportions are unlikely to change significantly in the next few years, although any change that will take place will entail a reduction in agricultural land. Agricultural production in the area has historically concentrated on the olive tree. The predominance of olive cultivation remains to this day - 80% of the total agricultural area is used for olive production. Other major crops are other fruit trees (particularly peaches, almonds and pomegranates), cereals, legumes and market garden produce. Livestock farming is relatively insignificant, although in recent years chicken farming has expanded.

Table 5.21 Agricultural Land Utilisation 1979

	Ha	%
Olives	62578	79.8
Fruit Trees	5173	6.6
Market Gardening - OMIVAN	1773	2.3
- Wells	627	0.8
Large-Scale Farming	5699	7.3
Pasture	1920	2.4
Forest	620	0.8
	78390	100.0

Source: CRDA 1978

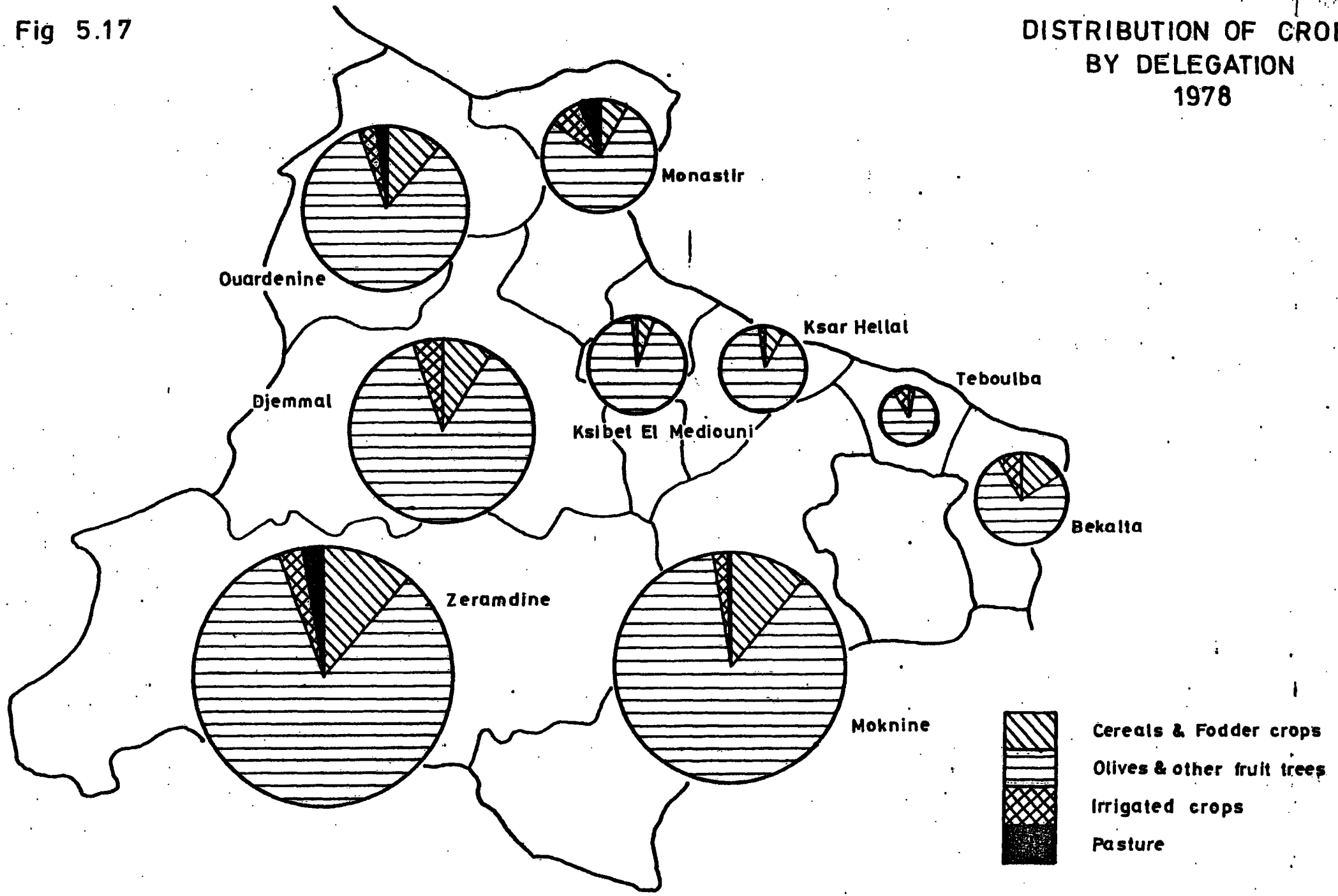
It is important to explain that the above figures are by no means static. Variations in rainfall distribution (for example) can lead to increases or decreases in the area given to one particular crop. Figure 5.17 illustrates the distribution of crops throughout the governorate.

a) Dryland Farming: This category consists essentially of cereal cultivation, in particular wheat (hard and soft HYVs) and barley, legumes (broad beans, chick peas and peas in particular) and fodder crops (lucerne, maize and Sudan grass). Production of cereals is concentrated in the Djemmal plain (table 5.22).

The CRDA, however, are very aware of the vulnerability of cereal cultivation in the governorate (CRDA 1974) primarily due to the irregularity of the rainfall. For example, the effect on production of the dry weather in 1976/77 can be clearly seen in the following table (table 5.23):

Fig 5.17

DISTRIBUTION OF CROPS BY DELEGATION 1978



Source: CRDA Unpubl stats 1978

Table 5.22 Cereal Cultivation 1977/78 by Delegation

	Dryland Farming	Cereal Production (tonnes)		
	Ha	Hard Wheat	Soft Wheat	Barley
Monastir	367	28	1.6	81.6
Ouardenine	1084	91	5.2	765.2
Ksibet El Mediouni	170	14	0.8	40.8
Ksar Hellal	195	14	0.8	40.8
Moknine	2122	175	10.0	510.0
Teboulba	22	7	0.4	20.4
Bekalta	470	42	2.4	122.4
Djemmal	1283	105	6.0	306.0
Zeramdine	2741	224	12.8	652.8
Total	8454	700	40	2040

Source: CRDA 1978.

Table 5.23 Cereal Production (Monastir) 1973 - 79

	1973 - 74		1974 - 75		1975 - 76		1976 - 77		1977 - 78		1978 - 79	
	Ha	Qx	Ha	Qx	Ha	Qx	Ha	Qx	Ha	Qx	Ha	Qx
Hard Wheat	2515	9557	2640	10560	2460	14760	1450	1450	3500	7000	1725	
Soft Wheat	1156	4624	1300	5200	1140	7710	664	664	200	400	660	not
Barley	3213	18636	3500	21000	2200	15400	1475	2212	6800	20400	2465	known
Total	6884	32817	7440	36760	5800	37570	3589	4326	10500	27800	4850	

Source: CRDA 1978,
Kraiem 1979.

Table 5.24 Legume Production 1973 - 79

	73 - 74		74 - 75		75 - 76		76 - 77		77 - 78		78 - 79	
	Ha	Qx	Ha	Qx	Ha	Qx	Ha	Qx	Ha	Qx	Ha	Qx
Beans	209	1150	230	1380	602	3612	557	1114	1459	4377	512	
Peas	212	891	230	1035	231	926	279	418	155	310	155	not
Chick Peas											106	known
Total	421	2041	460	2415	833	4538	836	1532	1614	4687	773	

Source: CRDA 1978

Given the poor suitability of cereal cultivation in Monastir, the regional agricultural authorities are trying to encourage farmers to shift to increased fodder production. Future trends are likely to be in this direction.

Legume production in the governorate is also highly variable(table 5.24).

The main leguminous crops of peas and beans are concentrated in the eastern delegations of Moknine and Teboulba.

Cultivation of fodder crops on a significant scale (ie beyond small individual plots producing for the land-owner himself and with no surplus) is a relatively recent phenomenon in the area. OMIVAN has been encouraging the production of lucerne and maize on the irrigated areas, but, as of 1978, only 48 ha had been planted. Similarly, CRDA has been trying to encourage dryland cultivation of fodder crops with the assistance of the Office de l'Elevage et Pâturage (OEP). As with OMIVAN, this is as yet having limited effect in that only 300 ha of the 1400 ha planned for fodder production by 1978 had been achieved.

Grandes cultures are thus of limited importance in the governorate. Only 7% of the total agricultural area is utilised for cereals, legumes and fodder crops. It is unlikely that this total will change, although there is a shift in emphasis from wheat production to fodder crop cultivation.

b) Arboriculture: Approximately 80% of the agricultural land area of Monastir is devoted to olive tree growing, and a further 6.6% to fruit trees. Although of such obvious importance, olive farming in the area is subject to a number of problems. First and foremost of these relates to tree management. It was indicated above that many

landowners neglect their land in favour of jobs in Sousse and Monastir. Those landowners who retain the land as their main source of income tend to be in the older age groups and resistant to change. These two factors manifest themselves in the form of poor land-preparation and a high proportion of senile trees. Consequently, olive production in the area is below its full potential. It is estimated that 25% of all the trees in the province have yields of less than 8 - 9 kg., which compares with the 30 kg for a tree in full production (Kraiem 1979). This results in a loss of approximately 21000 tonnes of olives per year, which is equivalent to a mean 3800 tonnes of oil, or 1.5M TD per annum. Trying to persuade farmers, particularly the older, established ones, to do anything about the problem is difficult. Two options exist: rejuvenation of the trees through grafting; and complete replacement of trees. The problem with the latter option is that it takes an olive tree 12 - 15 years before it reaches full productivity and many farmers cannot afford to lose any olive production, even if only 8 - 10 kg. per tree, for that length of time.

One way around the problem has been for the CRDA to encourage replacement of olives by other fruit trees, such as almonds, figs and peaches. Given that this reorientation is now a major policy objective, the amount of land area being converted to fruit tree production is low. During the period 1977 - 1979, only 350 ha were planted with fruit trees - a total of almost 30,000 trees. As of 1979, 5173 ha were used for fruit trees other than olives. The majority, some 70%, are found in the eastern delegations of Ksar Hellal, Ksibet El Mediouni, Teboulba and Bekalta. Table 5.25 indicates the spatial distribution of

arboriculture throughout the governorate.

Table 5.25 Arboriculture Distribution 1979

Delegation	Ha	% of total agricultural area in the delegation
Monastir	3620	77
Ouardenine	7826	83.3
Ksibet El Mediouni	2918	93.4
Ksar Hellal	2189	90.1
Moknine	6680	86.8
Teboulba	912	96.6
Bekalta	2035	78.1
Djemmal	10306	87.8
Zeramdine	19936	82.3
	66422	86.1%

Source: CRDA Unpubl. statistics.

In the light of the situation described above, there is considerable potential for improving olive production in the area, despite the fact that a certain proportion (not a very great one, owing to the limited market capacity) will be replaced by fruit trees. Similarly, there is potential for increasing fruit production in the area, both in old olive areas and also on the irrigated areas in the region. In general, arboriculture, as a resource, is grossly underutilised in the governorate.

c) Market Gardening: Perhaps the most important development in the agriculture of Monastir in recent times has been the expansion of irrigated market gardening. From the temperature point of view, Monastir has a very favourable climate for the production of primeurs (early vegetables),

which are extremely profitable. Until 1969, market gardening was restricted to areas irrigated by well-water, such as around Teboulba. In 1969 water was piped from the Nebhana dam to seven périmètres irrigués in the governorate (see Chapter Eight). This has led to a significant extension of irrigated market gardening.

Expansion of market gardening has not been restricted to OMIVAN zones. The CRDA has been putting substantial investment into the development of wells tapping the subterranean water sources. However, as indicated in Section 5.4, virtually all water available for agriculture in the governorate is now utilised. Potential expansion is thus extremely limited.

One of the main advantages of producing market garden produce, particularly the primeurs, is that there is a large and increasing market near at hand in the towns and expanding tourist industry. Production is concentrated on tomatoes, pimentoes and potatoes in the early, mid- and late-seasons, with cantaloupes, water melons and onions in mid-season.

Table 5.26 shows production and areas cultivated under cultures maraîchères. Although in terms of water availability, cultures maraîchères has reached its full potential in the governorate, productivity could increase and the cultivated area could be extended if better management of the water resources took place. For example, up to 1979, it was estimated that OMIVAN lost 40% of its water through broken pipes, inadequate tertiary distribution and stealing of water by farmers.

One of the major innovations associated with the development of irrigated market gardening in the governorate has been the introduction of large plastic greenhouses (serres)

Table 5.26 Market Gardening By Delegation 1979

Delegation	Irrigated Ha	Dry Ha	Production (tonnes)
Monastir	406	10	3960
Ouardenine	250	50	2350
Ksibet El Mediouni	30	5	265
Ksar Hellal	20	5	176
Moknine	226	80	1980
Teboulba	593	10	5280
Bekalta	466	100	4180
Djemmal	259	150	2053
Zeramdine	200	400	1756
	2450	810	22000

Source: CRDA Unpubl. statistics

These average 80m in length and 10 - 15 m in width, and are used particularly for the production of primeurs (melons and pimentoes). Their use is widespread on OMIVAN areas (in conjunction with smaller tunnel cloches) and the PDR and CRDA are both encouraging their use on other irrigated areas of the governorate. (Table 5.27).

Table 5.27 Area Cultivated Under Serres Monastir 1979

	Ha (Non-OMIVAN)
1976	8
1977	24
1978	70
1979	150

(1 ha = 3 - 4 serres)

Source: Gvt. de Monastir 1979.

Although actual area of irrigated market gardening has reached its maximum, potential production is greater than present levels. Given better water management and increased use of serres, plus improved extension work, total production could increase substantially.

d) Animal Husbandry: Animal husbandry within Monastir governorate is small. There are no large herds or flocks of animals; farmers tend to keep a small number to be grazed on their own plots of land (table 5.28). The one exception to this is chicken farming. Particularly since 1974, there has been a massive increase in the number of chicken farms. This has occurred as a result of the increasing demands for meat and eggs made by a) the growing tourist industry and b) the growing urban market, which is facing an increasing shortage of other meat.

Table 5.28 Livestock Monastir Governorate 1978

	No.	
Bovins	9063	
Sheep	49044	
Goats	2420	
Camels	1769	
Horses	2097	
Poultry	312950	- for meat
	61200	- for eggs

Source: CRDA 1978.

Future expansion of chicken farming is limited. The boom of the last half decade has brought production to levels in excess of local demand (107% demand is met by local supply). The opposite, however, is true of other livestock. The number of animals is decreasing, yet demand is increasing. The main problem is shortage of fodder. As intimated above, moves are being made to try and ease the situation, but it

Table 5.29 Livestock Distribution Monastir Governorate 1978

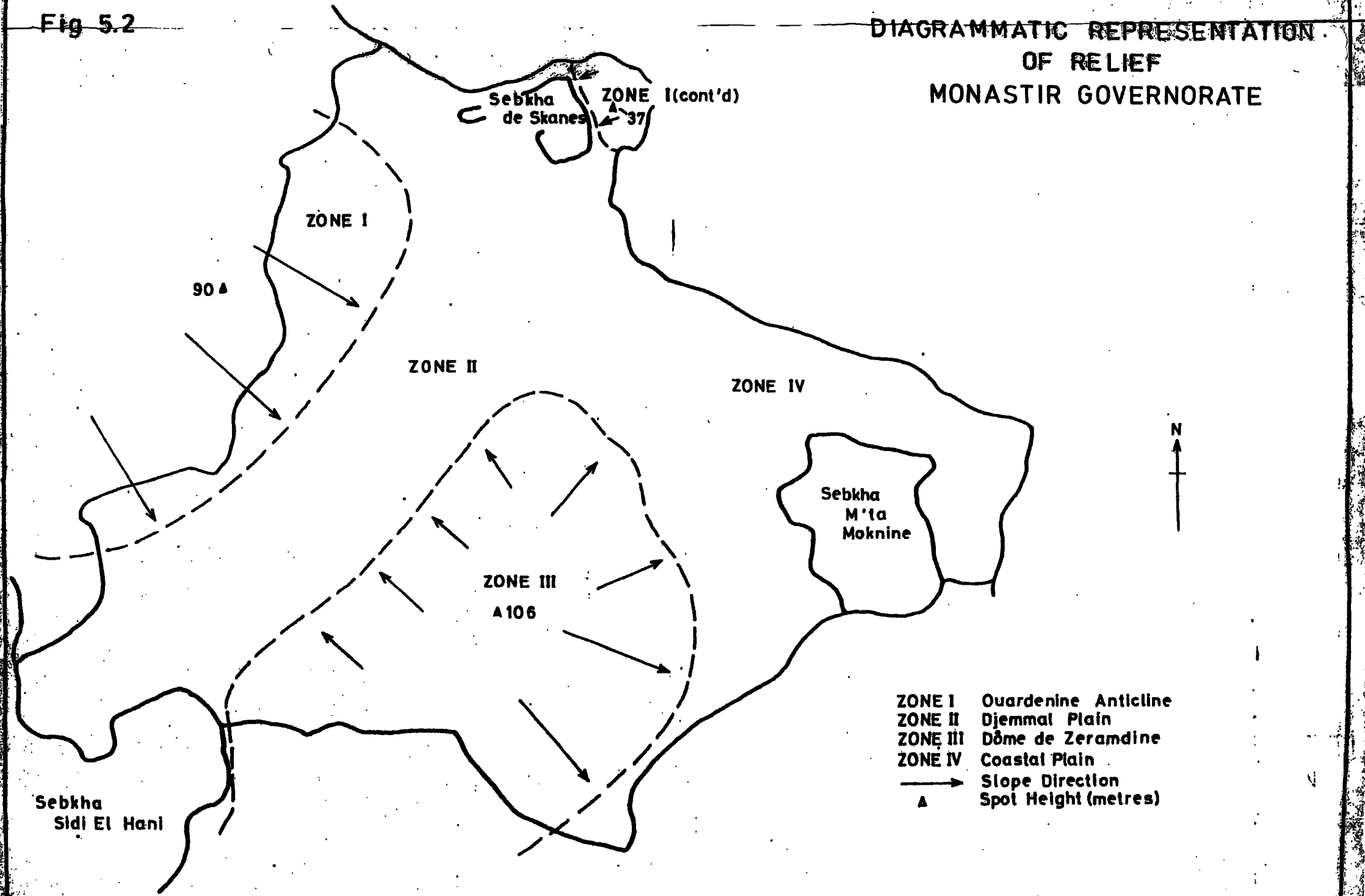
(No. of heads)

Delegation	Bowins	Ovins	Goats	Horses	Camels	Total
Monastir	1696	2930	151	665	60	5502
Ouardenine	1996	12500	160	756	82	15494
Ksibet El Mediouni						
Ksar Hellal	994	3400	300	522	77	5293
Moknine	514	10600	582	1335	589	13686
Teboulba	551	240	30	146	22	789
Bekalta	595	360	60	375	128	1518
Djemmal	1561	8043	450	1462	257	11773
Zeramdine	1156	10905	687	1836	554	15138
Total	9063	49044	2420	7097	1769	69393

Source: CRDA 1978

Fig 5.2

DIAGRAMMATIC REPRESENTATION OF RELIEF MONASTIR GOVERNORATE



would appear to be a slow process to get farmers to convert land to fodder production. The CRDA estimated that, in 1978, the total number of fodder units (FU) needed by stock in the governorate was 32,695,200 FU. However, existing supply is only 13,279,950 FU . This lack of food is resulting in high rates of stock mortality, particularly amongst bovins, food poisoning, as a result of stock eating toxic foods through lack of proper foodstuffs, and a low value of animal products because of the poor stock quality.

The present spatial distribution of animal husbandry in the governorate is indicated in table 5.29. It will be note that the areas of greatest number of livestock coincide with areas of potential expansion of fodder production.

5.7.2 Land Ownership

The basic resource inherent to agriculture is the land. The quality of the land in Monastir was discussed in the first half of this Chapter, it is now necessary to examine the structure of ownership of that land. There are three classes of land ownership in the rural sectors of the area, of which private ownership is the largest (88.9% of agricultural land - table 5.30). Given the recent history of land ownership in Tunisia - viz. the organisation of all agricultural land into co-operatives during the late 1960s, the collapse of those co-operatives and the return of the land to private owners, with many of the smallest landowners selling out either then, or immediately prior to co-operativisation - it is apparent that the actual structure of private land holding is quite complex. On the whole, land appears to be in the hands of a number of wealthy peasants. There are no large estates - total individual ownership

Table 5.30 Land Ownership of Agricultural Land 1979

Monastir Governorate

Delegation	State Land		Collective Owned		Privately Owned		Forest		Total	
	Ha	%	Ha	%	Ha	%	Ha	%	Ha	%
Monastir	454	13.9			2718	83.0	100	3.1	3272	100
Ouardenine	40	0.4			9352	99.6			9392	"
Ksibet El Mediouni	316	8.3			3509	91.7			3825	"
Ksar Hellal	106	3.4			3052	96.6			3158	"
Moknine	68	0.3			19140	99.7			19208	"
Teboulba	5	0.5			939	99.5			944	"
Bekalta	264	10.1			2341	89.9			2605	"
Djemmal	758	6.5	330	2.8	10651	80.7			11739	"
Zeramdine	2505	10.3	3357	13.9	18025	74.4	340	1.4	24227	"
Total	4516	5.8	3687	4.7	69727	88.9	440	0.6	78370	100

Source: CRDA Unpubl. Statistics 1979.

rarely exceeds 10ha, but on the other hand, there would appear to be few plots less than 1 ha. Although land owned by individuals is of reasonable size, unfortunately plots are fragmented - rarely more than 2ha in size. This is obviously a severe handicap to agricultural development. This situation is showing some signs of improvement since the creation, in 1977, of the Agence de la Réforme Agraire, whose function is to motivate farmers into land consolidation and reorganisation.

State owned land (terres domaniales) is land that the state was left with after the dissolution of the co-operatives. It is OTD policy to gradually sell off land to private individuals - but, in so doing, to take care that the land goes to people willing and capable of working the land efficiently. Until the land is sold off, the state acts as absentee landlord on individual plots. With a total of 4516 ha (5.8% of total agric. land), state owned land is not particularly significant in the governorate.

Collectively owned land (again insignificant, featuring only in Djemmal and Zeramdine) is extensive grazing land which did not revert to private ownership after the collapse of the co-operatives, but which was of little value to the state for its retention.

5.7.3 Fishing

Monastir governorate has a coastline of 64 km which is rich in fish resources. There has been a tendency in recent years toward over-exploitation of inshore fishing grounds. The deep sea areas, however, are unexploited by the Tunisians, primarily due to a lack of equipment; but they are being over-exploited (CRDA say 'violated') by Italian

fishing fleets. In 1979, the inshore fleet consisted of 670 boats, of which 359 are 'decrepit relics of a traditional mould' and 311 are motorised and equipped with modern equipment (CRDA 1978). The deep-sea fleet consists of 27 boats - 9 trawlers and 18 lamparos (boats that fish at night with the aid of powerful lights). It must be noted that one of the reasons for the deep-sea fleet seeming to be small is that there are no port facilities in the governorate really suited to handle these boats - consequently, they tend to register at either Sousse or Mahdia.

Existing supporting services in the governorate are limited; a medium-sized fishing port with two breakwaters of 100m at Monastir, and small ports with no proper artificial shelter at Ksibet El Mediouni, Lamta, Sayada and Teboulba. Ice-making factories exist at Teboulba and Monastir, and a fish farm exists at Khniss extending over 2ha and producing just 8.8 tonnes of fish per annum. In 1978, the inshore fishing fleet yielded 1428.6 tonnes and deep-sea trawlers just 34.3 tonnes. In addition, 136.3 tonnes of tuna fish were caught (table 5.31).

Table 5.31 Fish Production Monastir Governorate 1978

Delegation	Ports	Production (tonnes)
Monastir	Monastir, Khniss	628
Ksibet El Mediouni	Ksibet El Mediouni	126
	Lamta, Sayada	250
Teboulba	Teboulba	564
Bekalta	Bekalta	90
Total		1658

Source: CRDA 1978

Basically, there is an urgent need for rationalisation of the fishing industry in the area. The inshore fleet needs modernising and organising and the supporting services need improving. More also needs to be made of the deep-sea fishing grounds. The Mediterranean is a rich source of food - the Tunisians are not yet taking full advantage of it.

5.7.4 Industry

Industrial resources in Monastir suffer from spatial and sectoral imbalances. Although predominantly urban based, it is important to assess the industrial resources when considering rural development, for a number of reasons: potential employment prospects, the multiplier effects that may affect rural areas and the stimulus given to the rural sector by the demands made by an industrial sector. Despite the dominance of urban-based industries, there is also a significant small-scale rural industrial sector that requires consideration.

The main point to bear in mind with regard to industry in Monastir is the proximity of Sousse. Given that Sousse has vastly superior resources to Monastir (a port, a railway, a larger population, etc.) it is inevitable that industrial activity will always be concentrated there. This does not necessarily entail that Monastir need lose all its industrial development to Sousse, it simply implies that the development of Monastir must be complementary to, and take into account, that of Sousse. In the words of one industrial report on Monastir:

> 'Monastir pourrait être par rapport à Sousse comme la ville de Grenoble l'est par rapport à Lyon; ou Aix en Provence par rapport à Marseilles',
>
> (Min. de l'Int. 1978)

possibly slightly optimistic, but the sentiment is correct.

Detailed discussion of industrial activity in the governorate is difficult, given the total absence of aggregate production, or adequate employment statistics. However, an idea of the industrial base can be gained by reference to the economic activity statistics of the 1975 census, which are based on a 10% sample (table 5.32). The results of the census show that 51260 people were employed in non-agricultural activities (82% of all employed people), of which, 13,960 were employed in the tertiary sector, 2070 in transport and communications, and 470 in gas, electricity and other services. 31300 people (50% of total) were employed in manufacturing industry and construction.

Unfortunately no detailed statistics exist on the scale of industry in the governorate. Nevertheless, a number of general conclusions can be drawn from information available. The first is that industry in Monastir is predominantly small-scale. The largest employer, SOGITEX, employs 2280 people in two factories; the second largest, Meubles Skanès, employs just 869 people.

The second important point to note is the dominance of the textile industry, both large- and small-scale. In 1967 there were only 2314 people employed in industries employing more than 20 employees; 70% of these were employed by SOGITEX (Société Général d'Industries Textiles) at Ksar Hellal and Monastir. SOGITEX continues to dominate as the major employer and textiles continue as the prime industry. The Sahel, and Ksar Hellal in particular, has long been noted for its textile products, particularly hand-woven carpets and blankets. This is a tradition that continues today at both the large-scale and small-scale. Many houses in the governorate have looms at which women make, amongst other

Table 5.32 Economic Category of Employment Monastir Governorate 1975

Activity	Masc.	Fem.	Total
Agriculture, Fishing and Forestry	9620	1660	11280
Extractive Industries	530	10	540
Manufacturing Industry Utilising Agricultural Products			
Food Industry using animal products	-	10	10
Food Industry using vegetable products	410	10	420
Drink Production	20	-	20
Tobacco and monopoly industries	-	-	-
Textile Industry	6140	13730	19870
Leather and shoe industry	160	50	210
Carpentry and furniture	650	1440	2090
Furniture	680	50	730
Paper and Printing	20	-	20
Total Manufacturing Industry Utilising Agricultural Products	8080	15290	23320
Other Manufacturing Industry	2060	90	2150
Electricity, gas and water	470	-	470
Construction - bldg. & public works	5750	70	5820
Transport and communications	2030	40	2070
Commerce, Banks, Insurance	5760	270	6030
Services	6510	1420	7930
Non. Classif.	2640	290	2930
Total	43450	19140	62540

Source: 1975 Census (10% Sample)

things, carpets of very high quality. There is a large and ready market for the carpets and hand-made goods in the tourist zones of the region. The problem is that over the last decade the regional authorities have over-concentrated on the textile industry, taking advantage of the traditional skills, to encourage substantial investment in this sector. Monastir governorate is now highly dependent on this particular trade. With much of the textile goods in the factories being produced for the European market in 1972 Law-sponsored firms, Monastir is now very susceptible, economically, to forces beyond its control. This was made evident in 1976, when the EEC imposed trade restrictions on textile imports, particularly denim. Eventually, the Tunisian government was able to work out slightly more favourable trade terms with France, which improved the situation slightly. However, the problem with over-dependency on one sector continues.

The next most significant industrial sector is the construction material industry. Centred in Zeramdine, Moknine and Djemmal, this sector is concerned primarily with the manufacture of bricks, tiles and pipes utilising the fine red clays of the area. There is, in this sector, a complete contrast between tradition and modernity. At Moknine, low quality brickworks dominate, utilising old fashioned techniques, temporary buildings, and operating on a very small scale. In contrast, at Zeramdine a huge new ultra modern complex which produces a variety of construction materials has been opened and employs 260 people.

Industrie agricole et alimentaire is an industrial sector that has only recently made an appearance in the governorate, but, given the changes that are likely in the

region's agriculture, particularly the development of intensive market gardening, the potential for expansion here is substantial. In particular, the processing and packaging of foods for sale, either in Tunis or Europe, is one possible area of development.

With regard to the spatial distribution of industry in the governorate, as one would expect, it is concentrated in the three predominantly urban areas of Monastir, Ksar Hellal/Moknine and Djemmal. However, as intimated above, although these cores represent the centres of large-scale industrial enterprise, small-scale enterprises are scattered throughout the governorate, ranging from looms in single households to small factories that exist in virtually every village.

It is important to note, however, that the Agence de Promotion des Investissements (API) has been particularly active in Monastir. Under the auspices of the 1972 and 1974 investment laws, a great deal of industry has been attracted to the governorate. To potential investors Monastir is attractive; it has a large skilled and highly literate labour force, it is in close proximity to large urban markets and, for export, has easy access to a large port (Sousse) and an international airport (Monastir/Skanès). Consequently, industrial enterprises are expanding and increasing in number very rapidly. (for further discussion see Chapter Six).

5.7.5 Tourism

A final component of the economic resource base is the tourist industry. This is concentrated in two areas within the governorate: Monastir/Skanès and the Dkhila strip. First established in 1957 with one hotel in Monastir itself,

the tourist sector has grown to twelve hotels with a total bed capacity of 7240 (table 5.33). Establishing the tourist industry has required considerable investment-up to 1979 a total of 26,719,000 TD - which has come from both Tunisian and European sources. All the hotels have substantial European interests, but each, by Tunisian law, must be at least 51% Tunisian-owned.

The tourist industry in Monastir and Sousse has inevitably had a major impact on the local economy. In the first place, construction of a number of large hotels has required the development of a wide range of supporting services and infrastructure. Consequently, particularly in Monastir itself, one finds improved roads, drainage, water supply and electricity distribution. Initially stimulated by the requirements of the tourist industry, once set going, they were extended to other parts of the population. An unfortunate side of this, though, is that it is often the hotels which get priority access to services. Water is a good example. Despite the crucial shortage of water in the area and the desperate need for it amongst farmers, the hotels take large quantities for washing, cooking, swimming pools and perhaps most wasteful of all, for watering landscaped gardens. In 1976 20% of SONEDE water to Monastir governorate was supplied to the hotels.

Secondly, the tourist industry acts as a direct stimulant on the local economy in more ways than one. As table 5.33 indicates, in 1978, 3571 people were directly employed in the tourist industry. Although minimum salaries tend to be paid, it does at least mean that a significant proportion of the population (usually young (18 - 35), single people), have regular jobs and

Table 5.33 Evolution of the Tourist Industry Monastir Governorate 1964 - 1978

Investment	Cumulative Investment (000TD)	Capacity (Beds)	Direct Employment	Arrivals	No. of Nights	Devises (TD)
1964	2046	523	209	8250	40900	311000
1966	5326	1607	643	14676	105670	877000
1968	6002	1758	703	21540	191714	1380000
1970	9745	3166	1266	25934	230816	1916000
1972	11368	3610	1444	65357	549001	5545000
1974	13286	4068	1627	146302	1115578	15953000
1976	21579	6716	2686	135000	1161575	15552000
1977	25916	6742	3371	107288	1050640	18243000
1978	26719	7142	3571	129289	1238435	23530000

Source: Min. de l'Int/Gvt. de Monastir 1979a.

incomes (Jedidi 1979). As will be shown below, many of the employees come not from Monastir, but from the small villages in the northern part of the province, such as Menzel Khir and Sidi Bou Othman. Inevitably, therefore, the income gained from hotel employment is percolating through the rural areas.

Apart from direct employment, there are other demands made upon the local economy by the tourist industry - most important of which are food requirements. Undoubtedly it is the hotel industry that has been the major stimulant to the massive recent expansion of chicken farming; the presence of the hotels is providing a market for much of the increased fruit production and similarly the intensification of production on the périmètres irrigués will be readily absorbed by the rising number of tourists.

From Table 5.33 it will be noted that the tourist industry is bringing in a substantial amount of devises. In 1978 this totalled 23.5 TD. Not only is all the foreign currency helping the Tunisian balance of payment deficit, but the effects of this amount of money on the local economy can be easily imagined. Apart from the expenditure contributing towards the direct running costs of the hotels, there is all the money that the tourists spend on souvenirs, taxi-rides etc. It is also estimated that indirect employment generated by the tourist industry is equivalent to3jobs for every 4 beds available (Jedidi 1979). From this fact, in conjunction with the total number of direct jobs created by the tourist industry, it is estimated that 8927 jobs exist because of the tourist industry.

Finally, a word needs to be said on the future potential of the tourist industry in the region. Although a small number of new hotels are planned in the Sousse area

which will have some effect on Monastir, there are no plans at the moment for significant expansion of the hotel capacity in Monastir governorate. However, current occupation rates are only averaging 70% per annum. Whilst accepting that the hotels will never achieve 100% occupation given variations in seasonal demand, there is definite room for improvement. A number of recommendations have been made towards increasing occupation rates (Min. de l'Int/Govt. de Monastir 1979a). Amongst these are calls for better facilities, such as golf clubs, camping and caravanning sites, luxury villas and a casino. All of these would have the effect of generating more income and increasing direct and indirect employment.

5.8 Conclusion

Monastir governorate is not endowed with a great wealth of resources, and those resources which are available to the region are coming under increasing pressure from a growing, literate population. There are signs, however, that it is a population that is willing to work hard for, and to be actively involved in meeting the challenges and demands put upon it by the processes of development. This is particularly indicated by the fact that so many people, young ones especially, are either returning to their place of birth, or even refusing to leave it altogether.

Although the population is based very much in towns and large villages, the economy and society of the region have by no means become completely urbanised; ties with the land and with agriculture remain strong. This has not, however, prevented the development of a thriving, if vulnerable, manufacturing industry sector.

The basic problem clearly facing the development authorities, therefore, is one of using scarce resources as efficiently and as effectively as possible. It is a question of balancing the use of resources such as water so that maximum benefit may be achieved. The question is, who decides what is 'maximum benefit'. Is maximum benefit to be seen as ensuring that capital gets into the region regardless of who it goes to first, and then assuming that its benefits will 'spread'; or should it be a case of ensuring that everyone has a share, even if such dispersal of benefit slows down the overall process of development?.

Issues such as this, and general efficient management of resources, can only be decided upon and carried out by a central authority with executive powers sufficient to override other self-interested bodies; an authority with sufficient sense of responsibility and detachment to take a balanced view of the issues and one that has the power to implement them. The establishment of such a body was discussed in the previous Chapter. The following Chapter examines how that authority is answering the problems facing it in Monastir and how it is using the resources described in this Chapter to develop the rural economy and society of Monastir.

CHAPTER SIX

THE RURAL DEVELOPMENT PROGRAMME: MONASTIR GOVERNORATE

6.1 Introduction

It is the function of this Chapter to illustrate the implementation of an integrated rural development programme at the regional level in Tunisia, using the governorate of Monastir as a case study. Although the programme has not been constructed along exactly parallel lines to the model outlined in Chapter Two, it can be viewed through the five components that were identified in that model as being the basic foundation of IRD. The key to the whole IRD model propounded in Chapter Two is the institutional framework within which the programme operates. This element of the programme was discussed in full in Chapter Four. This Chapter will focus on the economic component relating to increases of production, income and regional capital, the social component, including an assessment of the influence of the IRD programme on the general welfare of the population, the infrastructural developments that have taken place in support of rural development and, finally, the spatial framework within which the whole process is taking place.

6.2 The Economic Component

There are two ways in which the economic component can be analysed. On the one hand, a sectoral approach may be taken. An ITC/UNESCO study on development in Sousse governorate published in 1975 identified three development carriers in the region: manufacturing industry, tourism and

agriculture, with the service sector acting as a principal employment carrier, but not as a full development carrier (ITC/UNESCO 1975). It is clear that a parallel situation exists in Monastir governorate. Given this, there is a case for examining the regional rural development programme (PDR) through each of these sectors. However, as the organisation of the PDR is based on the three lines of attack outlined above (Chapter Four), it is perhaps more logical to base the analysis of both the economic and social components on these three aspects. Relevant to the economic component are the objectives of employment creation and consolidation and of vocational training. In addition, both marketing and credit systems will be discussed.

6.2.1 Employment Creation and Consolidation

The governorate authorities estimate that an average of 14000 jobs (11000 for men and 3000 for women) need to be created per annum (Min. de L'Int/Gvt de Monastir 1976). This does not allow for improving the situation for the large number of under-employed workers, although employment consolidation will, it is hoped, alleviate this.

The rationale for focusing development strategies on consolidation and creation of employment is based on three points. In the first place, providing jobs for people improves their social well-being; the Tunisian government believes that, apart from other aspects, it has a moral obligation to provide employment for the national population. Secondly, the incomes derived from employment have inevitable multiplier effects throughout the economy (Kotter 1974). Finally, job creation implies increased output. As it is in Tunisia's interests, and is a major component of national development strategy, to

increase domestic production of goods and services, then job creation is fulfilling a dual function.

Three broad methods are utilised in Monastir: the direct creation of jobs through the establishment of some commercial concern, the benefits from which are measured primarily in terms of jobs created - any other benefits being secondary in importance; the indirect creation of new jobs which have resulted from the need either for increased production of a particular product or for a new service (even here, equal weight is often given to the employment benefits as to the production benefits); and thirdly, actions which consolidate a particular economic activity, thus ensuring continuation of employment requirements within that particular sector.

The greatest part of the work in the creation and consolidation of employment in Monastir is carried out within the framework of the PDR, co-ordinated by the OAR. Between 1973 and 1979, 20% (almost 1mTD) of the PDR budget was spent on this sector of the programme. In addition the CRDA, OMIVAN, the national monopoly agencies, API, AFI and the OTTEEFP all play significant roles. To illustrate the kind of work undertaken in this section of the programme, a sectoral approach will be taken.

a) Agriculture: In developing the agricultural sector, the regional development authorities are not only seeking to create and consolidate jobs in one of the major employment sectors of the regional economy, but also to help strive towards the national objective of self sufficiency in food production by 1981. In Monastir governorate this is translated into the following specific production targets for 1981 (table 6.1).

b) Irrigated Farming: The agricultural area in which the

Table 6.1 Food Production Targets - Monastir Governorate 1977 - 81.

	Food Production 1977 as % of total needs	Planned Food Production 1981 as % of total needs
Red Meat	23	36
White Meat	67	103
Milk	71	61
Fish	91	111
Cereals	1.14	0.5
Legumes	120	187
Fruit	76	100
Olive Oil	120	103

Source: Min. de l'Int/Gvt. de Monastir 1976.

greatest effort is being made with regard to employment is in the development of irrigated farming. With the dual objectives of encouraging farmers and rural labourers to stay on the land and to take advantage of the ready and expanding market for early season market garden produce both in Tunisia and in Europe, the PDR has allocated considerable resources to the development and expansion of irrigated farming in Monastir governorate.

Most of the development in this field is being carried out by OMIVAN in the périmètres irrigués supplied with Nebhana water. However, from its own budget, the PDR has been funding the expansion of land cultivated under large plastic greenhouses (serres) and cloches since 1974. Between 1974 and 1977, 17 hectares of land were developed

with *serres* throughout the governorate at a cost to the PDR budget of 22000 TD. 150 farmers benefitted who were able to claim grants for up to two *serres* each. The whole of the 22000 TD was distributed in the form of grants (average 146 TD per farmer). Since 1977, the *serre* development programme has continued, but with somewhat erratic progress. The V Plan for Monastir governorate anticipated 200 ha of *serres* by 1981 in addition to the 1500 ha of Nebhana irrigated areas. By 1980 only 52 ha had been developed. In both 1978 and 1980 15 ha were established, benefitting 300 farmers at a cost to the PDR over both years of 49000 TD; in 1979 just 7 ha (70 farmers, 10500 TD) were developed. A programme that is therefore relatively cheap (average cost to the regional authorities per farmer = 157 TD) and has a wide range of benefits including increased production, high potential incomes for farmers and which encourages farmers to stay on the land, is not being developed to the full. There are a number of reasons for this.

The cultivation of crops under *serres* requires a fairly elaborate technical knowledge which is above that of the average Tunisian farmer. Thus, despite extensive extension work and the fact that farmers can see the tangible benefits from this kind of intensive farming, there is a marked reluctance amongst farmers to undertake the developments. Although a farmer receives an average of 150 TD towards the cost of two *serres*, one *serre* costs anything between 1000 and 1500 TD. The difference can be raised through various credit schemes, but nevertheless it represents a significant financial outlay for a small-scale farmer. Once constructed, the farmer must be very careful with his soil preparation, seed selection, cultivation techniques and so on. *Sericulture*

is a high-risk venture. Finally, and this represents one of the major factors accounting for the lack of success in expansion of sericulture, the system is highly vulnerable to adverse weather conditions. The winter of 1978/79 was very cold, experienced a lot of high winds and was very wet. Many farmers had serres and crops destroyed, resulting in an unwillingness for more farmers to develop serres the following year.

As was made clear in the preceding Chapter, a crucial constraint to the development of agriculture in the region, especially to irrigated farming, is the lack of water. In an attempt to help combat this, the PDR has included, since 1974 allocations of grants and loans to farmers to: improve and repair existing private wells; to dig new wells; to purchase electric pumps for the wells; and to purchase Bauer Tubes (water distribution pipes). In the seven years 1974 - 1980, a total of 87000 TD have been allocated for this, the largest proportion of which (58281 TD) was spent in the four years 1974 - 77; 207 farmers have benefitted, with average grants of 420 TD each.

In addition to the loans and grants provided for the development of irrigated farming in the region by the PDR, the CRDA provides a team of extension workers who visit farmers 'on site' to give free advice on farming techniques and who hold regular information days when sericulture and its associated techniques are advertised and discussed.

c) Aboriculture: Given that olive farming is of such importance in the governorate, it has been paid remarkably little attention by the development planners. Between 1973 and 1975, no aid was available to olive farmers at all. In 1976, however, recognition was made of the scant attention that

had been paid to this important sector, and a programme for olive tree regeneration was initiated jointly by the PDR and the ONH. The plan was to rejuvenate 15000 of the estimated 500000 senile trees between 1976 and 1978, with 6 Dinars per rejuvinated tree to be paid to farmers over a three year period - 50% from the PDR and 50% from the ONH. As table 6.2 shows, the plan failed.

Table 6.2 Olive Rejuvenation Programme 1976 - 1978

	No. of rejuvenated trees	PDR grants (TD)
1976	1794	5382
1977	5772	17316
1978	1569	4707
Total	9155	27405

Source: OAR Monastir
Unpubl. statistics.

In fact, only 61% of the planned objective was achieved. The reasons for the failure were partly due to uncontrollable factors such as the weather, but the main factor was the lack of skilled labour and technicians to help implement the programme. The governorate, therefore, is still left with an extensive, but low productive, olive crop, which is not proving to be the substantial employer that it could possibly be.

It has to be noted, however, that development in the olive sector is not confined solely to regeneration of

olive trees; an attempt is being made at diversification. The PDR has tried, since 1977, to give encouragement to farmers to replace old olives with other fruit trees. In 1977, 210 ha were replanted with peach, almond, apricot and apple trees. Farmers received grants of up to 60TD/ha to a maximum of 3 ha per farmer. Total credits of 12600TD were allocated from PDR funds in that year. Again, though, results did not reach expectations. The PDR had planned for a total of 400ha to be replanted. The problem again was lack of supporting services. Progress did improve over the following three years; in 1978 400 ha were replanted, benefitting 150 farmers, at a total cost to the PDR of 20000 TD, but this dropped to 15000TD (1979) and 17000TD (1980). In all, 1640ha were replanted with fruit trees between 1977 and 1980, benefitting approximately 600 farmers. It must be emphasised that this programme essentially relates to employment consolidation not creation. It does, however, lead to augmented incomes from the increased amount of marketable goods, and the extra work required by fruit trees as opposed to olives does ensure a reduction in under-employment. Overall, however, there is substantial scope for better-organised and more extensive aid in the arboriculture sector.

d) Animal Husbandry: Primarily in order to increase production of meat and milk, the PDR assists (in conjunction with the Office d'Elevage et de Pâturage) with the purchase of sheep, cows and draught animals for individual farmers. The programme, however, is not extensive. In 1974, 100 sheep were distributed amongst 10 farmers at a total cost of 2600 TD to the PDR, half of which was to be repaid by the farmers over 3 years. 63 milk cows were also

distributed at a total cost of 12600TD. In 1975, 50 pure-breed cattle were distributed (one per farmer) at a total cost of 12500TD, with 50% repayable over 4 years by recipients. The bad weather 1976 - 1977 prevented the distribution of more stock, but 1978 to 1980 saw a continuation of the same small-scale exercise, with a total expenditure over the three years of 36000TD. Financial arrangements over this period, however, changed; 70% of the cost of a beast was to be loaned by the BNT, 20% given as a grant by the PDR and the remaining 10% to be provided by the farmer. In addition to animal purchasing, limited effort has gone into an attempt to improve fodder supplies in the governorate.

The role of the PDR in the livestock sector is therefore limited and relates primarily to production increases. The main criticism to the programme is that it was making life very easy for the farmer. 50% grants, with easy repayment terms on the other 50%, meant that farmers were not taking their financial obligations very seriously. This was indicated by the fact that farmers working in irrigated areas were entitled to grants of 150TD for the purchase of draught animals to work the land. But this had to be stopped when it was discovered that the farmers were taking the money and spending it on other things. However, the new arrangements, with the bulk of the credit coming through the BNT, should improve the situation.

In addition to plans and actions directly involving the PDR, are a number of activities sponsored and implemented by centralised agencies, in particular those of FOSDA (Fond Spécial de Développement Agricole) and PAM 482 - a project sponsored by the Programme d'Alimentation Mondiale (World Food Programme) which is a division of the FAO.

FOSDA represents a national pool of funds allocated for agricultural projects throughout Tunisia, which is controlled by the Department of Agriculture. Applications are made to FOSDA, through the CRDA, by individuals or groups of people for credits to fund various agricultural or agricultural related activities. Once awarded, the distribution of FOSDA cash is monitored by the regional CRDA. On the whole many applications are made for projects that fit in with the overall regional rural development plan. This is made clear in table 6.3, where it will be seen that total credits allocated to the Monastir CRDA 1976 - 78 were distributed amongst much the same kind of activities as were funded by the PDR. The main advantage of FOSDA is that, should large capital investments be required in an area which are beyond the means of the regional budget, then they can be provided from this large, central pool. Unlike PDR budgets, regions do not have fixed allocations of FOSDA money per annum; credit is awarded according to annual requirements.

For the individual receiving credit from FOSDA, there is little difference from PDR money. It obviously depends on the project to be financed, but terms of repayment, the proportion of credit awarded in the form of a grant, the maximum allocation per person per hectare etc., is very similar to credits supplied by the PDR.

Thus, although FOSDA is independent of the PDR, it ties in very closely with the regional rural development programme. As the CRDA acts as a regional 'clearing house' for FOSDA, there is no danger of FOSDA financing projects that do not tie in with the overall regional strategy.

Table 6.3 FOSDA Credits Monastir Governorate 1976 - 1978

Project	No. of requests	Credit (Dinars)
Creation of Water Points	17	7,723.475
Management of Irrig. Areas	11	3,633.932
Farm Buildings	14	41,681.925
Rural Housing	7	3,945.000
Fishing	17	98,049.532
Fruit Tree Plantation	11	885.600
Agricultural Material	375	332,204.057
Collège d'Enseignement Secondaire	34	5,359.097
Livestock	95	27,536.000
Water Equipment	73	41,954.788
Chicken Farming Equipment	6	15,498.864
		578,972.270

Source: OAR Monastir
Unpubl. statistics.

PAM 482 is a project jointly financed by the Tunisian government and the FAO; it affects some 400 polyculture co-operatives (production co-operatives, service co-operatives and agro-combinats) throughout the Sahel, central and southern Tunisia. The broad objectives of the project are to develop agriculture, increase employment and improve nutrition in the region (Anon 1973). Under an agreement signed in March 1969, a total investment of 25m TD (of which 11.5m is from Tunisia) will be made available in the form of technical assistance, grants, long-term loans and assistance with the purchase of miscellaneous materials. FAO aid relates predominantly to technical assistance, provision of materials and animal feed.

In Monastir governorate, there are 21 service co-operatives receiving assistance from PAM 482 (table 6.4).

Most are small (only three involve more than 100 co-opérateurs). All receive assistance with olive tree management and fertilisation, and all but six have management and seed aid for pasture improvement. In the case of six of the co-operatives, PAM 482 has provided credit for the purchase of draught animals.

Table 6.4 Service Co-operatives Monastir Governorate with Assistance from PAM 482

Delegation	Co-operative	Date of Creation	No. of Co-opérateurs
Ouardenine	Ouardenine	27/8/71	334
	Maatmar	19/4/72	33
	Sidi Ameur	9/8/71	50
	Mesjed Aissa	20/8/71	60
	Menzel Khir	2/8/71	29
Monastir	Monastir	20/8/71	83
	Khniss	28/4/74	80
Zeramdine	Zeramdine	31/7/71	33
	M'lichette	17/4/71	170
	Menzel Hayette	25/5/71	118
	Beni Hassen	28/5/73	25
	Ghenada	30/5/73	13
	M'zaougha	11/4/73	31
	Hatem	30/5/73	12
Djemmal	Djemmal	8/8/71	52
	Zaouiet Kontach	8/8/71	28
	Menzel Kamel	2/5/72	43
Bekalta	Bekalta	13/8/71	87
Ksar Hellal	Ksar Hellal	24/7/71	63
	El Harkoussia	4/5/73	18
Moknine	Ennouhoudu	24/12/69	12

Source: CRDA 1974.

Staff members of PAM 482 operate with a certain degree of autonomy, but have links with the OTD. Consequently, there is no direct link with the PDR. However, consultations do take

place between the two bodies. It has to be noted that it was the prime intention of PAM 482 to initiate the co-operatives - once established, it was believed that they would continue under their own momentum. Hence, in 1979, ten years after its start, PAM 482 has ceased to exist, although the co-operatives continue to function.

e) Fishing: The IV National Development Plan envisaged a national fish production of 53000 tonnes by 1976, 4080t (13.5%) of which would come from Monastir. In order to achieve this, three areas of development were forseen as necessary in the governorate: the improvement of port infrastructure; the modernisation of the fishing fleet; and improvement of the cadre humain.(table 6.5).

Table 6.5 IV Plan Forecasts for Fishing Port Infrastructure Development and State of Realisation by 1976 Monastir Governorate.

Port	Planned Development	State of Realisation (1976)
Teboulba	Construction of a second sea wall	finished
	Dredging of basin	still in progress
Bekalta	Reinforcement of existing port infrastructure	not started
	Construction of a sea wall	not started
Sayada	Construction of a second sea wall	finished
	Dredging of basin and channel	still in progress
Monastir	Development of a new port (Port d'Ouestania)	still in progress

The developments listed in table 6.5 were the responsibility of the Ministère d'Equipment, as was the cost (total, excluding Monastir = 780,000TD), and as can be seen,

progress was not very satisfactory with only two of the planned projects having been completed. Fleet modernisation met a similar lack of progress. A total of thirty fishermen received assistance with the purchase of new boats from the PDR (between 500TD and 620TD per fisherman) and others (an undisclosed number) were encouraged to buy new boats privately (with the assistance of bank loans). A programme of boat modernisation, e.g. by the addition of motors, also took place, but this met a 20% shortfall in projected figures. Fleet modernisation was also financed by a mixture of private funding and PDR grants. Development of the cadre humain was focused on two aspects: increasing the number of patrons and mechanics (ie trained, skilled people) and increasing the number of fishermen. In all, it was hoped to bring in another 856 employees to the fishing sector during the period of the IV Plan. But owing to the fact that many of the skilled workers preferred to migrate to Europe for more money, and the fact that many young people find a fisherman's life (even in the Mediterranean) too hard and preferred to look for more comfortable and more secure work elsewhere on land, substantially fewer than the 856 anticipated new employees were recruited.

Thus, during the period of the IV Plan, a sector that was potentially rich in terms of contributions to national GDP, the regional gross agricultural product and the regional employment situation, despite being backed by not unreasonable or impractical plans, was inefficiently developed, and its potential un-fulfilled. Consequently, with the commencement of the V Plan, the development planners were left with even more ground to make up.

In 1977, the planned developments in the fishing sector of Monastir governorate for the following five years

were along similar lines to the planned developments for the period of the IV Plan, with a few extra, complementary innovations. The new port at Monastir was to be completed and the Port at Souknine/Teboulba was to be improved. In addition, boat construction facilities were to be made available at Teboulba, Sayada and Monastir. Fishing fleet modernisation was to continue with the purchase of new boats and modernisation of existing craft. At Khniss, the development of a fish farm was to be encouraged. Although privately funded and self-financing, this project was to receive technical assistance from permanent employees. Overall production was expected to double over the 5 years and, to cope with the influx of fish on to the market, the plan allowed for the construction of two ice factories (at Monastir and Teboulba) and two cold storage rooms in the governorate (in conjunction with OMIVAN) for storage of fresh fruit and vegetables . Naturally these developments would entail an increase in the employment requirements in the fishing sector by 1981 - the increase is estimated at a further 702 unskilled workers and 256 skilled workers.

Finance for these developments is complicated (Table 6.6). Total planned investment requirements for the fishing sector 1977 - 1981 equal 7,274,000 Dinars. Of this, 82.8% is to be provided from the budgets of various state departments. In particular, this includes the Ministère d'Equipement which is primarily responsible for port development, the Office National de Pêche which funds much of the fishing flotilla expansion and modernisation, and the PDR, which provides grants and loans for the purchase of new boats, In addition to assistance with boat purchase (in which PDR can only be of limited assistance because of its relatively small budget), the PDR has helped in the creation of 5 Sociétés de Pêche

Table 6.6 Sources of Investment for Fishing Sector Development Monastir Governorate 1977 - 1981 (Dinars)

	No.	1977 Private	1977 State	1978 Private	1978 State	1979 Private	1979 State	1980 Private	1980 State	1981 Private	1981 State	Total Private	Total State
Port Development*												-	2650000
Boat Construction facilities		34000	-	4000	-	34000	-	4000	-	24000	-	100000	
Purchase of new boats													
- trawlers	22	54000	306000	72000	408000	90000	510000	90000	510000	90000	510000	396000	2244000
- Lamparas	20	15750	89250	21000	119000	26250	148750	26250	148750	21000	119000	110250	624750
- Inshore Boats	70	8400	75600	6600	59400	9600	86400	7200	64800	10200	91800	42000	378000
Boat modernisation													
- Inshore boats	50	4500	22500	4500	25500	4500	25500	4500	25500	4500	25500	22500	127500
Installations													
Ice Factory	3	9000	-	9000	-	-	-	9000	-	-	-	27000	-
Cold Storage	2	6000	-	-	-	-	-	6000	-	-	-	12000	-
Fish processing factory	2	270000	-	-	-	-	-	-	-	270000	-	540000	-
Total		401650	496350	117100	611900	164350	770650	146950	749050	419700	746300	1249750	602425

* No details of yearly breakdown of Portdevelopment budget.

Private = Private Investment

State = Investment from budgets of various state bodies.

Source: Min. de l'Int/Gvt. de Monasti 1976.

(fishing service co-operatives), at Monastir, Sayada, Teboulba and Bekalta(2). Aid in this respect has been in the form of technical and managerial assistance rather than financial. Not included on table 6.6 are the activities of the CRDA in the fishing sector. These are less tangible than those of other bodies, but nevertheless important. The arrondissement de pêche of the CRDA gives technical assistance to fishermen for boat repair and maintenance, information on new fishing techniques, has helped in the organisation of the five Sociétés in conjunction with the PDR and has carried out feasibility studies on the cold storage and preserving units.

The remaining 17.2% of the investment that is to come from private sources is a reasonable proportion to expect, given that beneficiaries cannot expect everything to be provided by the State. The most surprising thing regarding private investment requirements relates to the funding of the seven major installations, all of which are to be completely privately funded. Given both the assistance from the API for other industrial concerns and the necessity for these plants in the light of the planned expansion of the fishing sector, it seems strange that some of the ~~m~~TD budget has been allocated to these developments.

The above discussion relates to the plans for the five years 1977 - 81. Unfortunately, no interim results have been published. If the planned objectives are achieved, then a significant improvement will have taken place across a broad base of the fishing industry in the governorate. However, on the evidence of a) past experience, and b) field observation, it would appear highly unlikely that much of the planned development will be completed by 1981. The new port at Monastir was completed 1978, but then, that was supposed

to have been finished by 1976. There is very little evidence (January 1981) of new construction at either Teboulba or Sayada. One of the cold storage plants is under construction at Monastir airport, but this is more a result of pressure from OMIVAN than from the fishing industry. A look at the PDR investment figures for the years 1978 - 81 also suggest a failure of achievement: in 1978, the PDR granted loans and grants worth a total of 15000TD for the purchase of two trawlers: in 1979, 15,000TD were awarded for the purchase of three smaller boats. For 1980 and 1981, there was no allocation of PDR funds to the fishing sector.

A plan that was initiated in 1977 on the basis of not only planning for developments for 1977 - 81, but also of catching up on uncompleted projects from the previous period, looks as though it, too, is going to fail in achieving its objectives. This will be unfortunate for, had the programme been successfully completed, then the basis for an efficient, productive and employment-absorbing industry would have been established. As it is, the fishing industry in Monastir governorate is little better off now than it was in 1974.

f.) Industry: The growth of the Tunisian economy throughout the 1970s has been remarkable. GDP growth rates in the latter half of the decade have reached 9.8%, compared to an average of 4.2% in the 1960s. The motor of this growth is undoubtedly industrial investment, particularly in manufacturing industry (Kamelgarn 1978). Manufacturing industry absorbed 18% of all investment during the IV Development Plan and it is anticipated that it will absorb 23.6% during the V Plan. The emphasis on manufacturing industry has been due to the fact that the Tunisian government has seen this sector as the main way of solving

the employment problems and of quickly mobilising the national economy.

A number of methods have been utilised to promote the development of the manufacturing industry sectors, not least of which the 1972 and 1974 laws (The Middle East 1979). The 1972 law encourages foreign investment in export-oriented industries in Tunisia and is monitored and implemented by the API, whereas the 1974 law (also administered by the API) relates to domestic industries producing primarily for the domestic market. In addition, regional economic services liase with the API to encourage industries to specific areas, and, as will be shown below, the PDR plays a crucial role in this respect.

There have inevitably been many problems associated with this kind of development, not least of which have been spatial and sectoral imbalances linked with internal and external dependency situations (Rivière 1979, Kamelgarn 1978). However, it is not the role of this thesis to analyse the national problems of Tunisias development strategy, but to examine its implications within the confines of Monastir governorate. It is the intention of this section to investigate the patterns of industrial investment in Monastir governorate, with particular reference to the years 1976 - 197 for which detailed information was made available; to examine the role of the PDR in the development of this industry, and to draw conclusions as to the merits of the industrial expansion for the whole governorate and, more particularly, for the rural sector.

As with other sections of the regional economy, an interpretation of what the V Plan means for the industrial sector has been established (table 6.7).

Table 6.7 Planned Investments by Sector Within the Framework of the V Plan (1977 - 81) Monastir Governorate

Sector[1]	Investment (MD)	%	Employment	
I.A.A.	130	13.68	9,600	10.66
I.M.C.C.V.	290	30.52	11.900	13.22
I.M.M.E.	170	17.89	12,700	14.11
I.C.C.	220	23.15	3,800	4.22
I.T.H.C.	100	10.52	42,000	46,66
I.D.	4	0.42	10,000	11.11
Total	950	100	90,000	100

Source: Min de l'Int/Gvt. de Monastir 1979b

It is clear from the table that, although the sectors in which heaviest investment should take place are the construction material industries and the chemical and associated industries, job creation will be greatest in the

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(1) Sector abbreviations conform to standard Tunisian Industrial classification:

I.A.A.: Agricultural and Food Industries.
I.M.C.C.V.: Construction Materials, Ceramics and Glass.
I.M.M.E.: Mechanical, Metallurgical and Electrical (some times sub-divided into IMEC Mechanical, and IME Metallurgical and Electrical.
I.C.C.: Chemicals and Plastics.
I.T.H.C.: Textiles, including Clothing, Leather and Shoes.
I.D.: Diverse industries.

In addition, the following two divisions are sometimes used:

HUIL : Olive Oil Presses
AFF : Some kind of services?

textile industry. It is felt, however, that the target total of 90000 new jobs to be created in 5 years is somewhat optimistic, particularly as, by 1979, only 13000 people were employed in the industrial sector, and only 73600 people in total employed in the whole governorate. That these plans are unrealistic is also born out by an investigation of agreed industrial investment in the years 1976 - 1978 (table 6.8). Whilst these three years do not conform to the V Plan, they do, nevertheless, reveal a number of disturbing trends. The table presents data from unpublished statistics held by the economic office of Monastir governorate. It relates to all industrial projects agreed (not necessarily realised) in those three years, although it is anticipated that virtually all will be realised within the short term. All but a very small proportion of the projects are agreed under the auspices of either the 1972 (export industry) Law or the 1974 (domestic industry) Law. From figures 6.1 and 6.2, it is clear that the investment is heavily concentrated both sectorally and spatially, as are the agreed new employment opportunities.

With minor variations from year to year, the most favoured investment locations were Monastir and Ksar Hellal, and most of the investment has been agreed for the textile sector. Over the three years, the total agreed investment was over 48mTD; 34.4% was for Monastir delegation and 28.5% for Ksar Hellal. Zeramdine was the only other delegation with a significant proportion of investment (13.4%) and most of this came in one year (1976) for one project - a large brick and other construction materials plant.

Similarly, new employment opportunities resulting from the investment are also concentrated in just a few areas. Some 9982 jobs will eventually result from the agreed investment 1976 - 78 (contrast this with the planned 90000 new jobs

Table 6. 8. Industrial Projects Agreed Monastir Governorate 1976 - 1978.

Delegation	Sector	1976 No. of Projects	1976 Investment (Dinars)	1976 Emplyt.	1977 No. of projects	1977 Investment (Dinars)	1977 Emplyt	1978 No. of Projects	1978 Investment (Dinars)	1978 Emplyt	Total 1976-78 No. of Projects	Total 1976-78 Investment (Dinars)	Total 1976-78 Emplyt
Ksar Hellal	IT	50	3793696	918	56	6338785	1332	18	1750273	532	124	10882754	2582
	IME	1	-	-	-	-	-	3	63200	30	4	63200	30
	IMEC	1	2000	3	-	-	-	-	-	-	1	2000	3
	ICHC	1	70000	15	-	-	-	8	-	-	1	70000	15
	IAA	3	401721	41	2	92100	12	3	43000	32	8	536821	85
	IMCCV	10	539300	214	3	57700	44	-	-	-	13	597000	258
	ID	4	170500	81	4	69100	45	9	432800	96	17	672400	222
	HUILERIE	-	-	-	-	-	-	-	-	-	-	-	-
	AFF	-	-	-	-	-	-	-	-	-	-	-	-
	Total	70	4977217	1272	65	6557685	1433	33	2289273	490	168	12824175	3195
Monastir	IT	6	1455405	296	7	6583920	1021	4	657500	146	17	8696825	1463
	IME	-	-	-	4	1911305	250	6	1920000	213	10	3831305	463
	IMEC	2	86000	47	-	-	-	-	-	-	2	86000	47
	ICHC	-	-	-	-	-	-	-	-	-	-	-	-
	IAA	2	1240000	56	2	80000	13	5	318200	35	9	1638200	104
	IMCCV	3	122500	52	7	931300	143	4	364000	29	14	1417800	224
	ID	1	280000	19	10	530375	124	3	138500	5	14	948175	194
	HUILERIE	1	13100	2	-	-	-	-	-	-	1	13100	2
	AFF	1	55500	56	-	-	-	-	-	-	1	55500	56
	Total	16	3252505	528	30	10036900	1551	22	3398200	474	68	16687605	2553
Djemmal	IT	5	370000	505	2	373000	50	5	398050	218	12	1141050	773
	IME	2	10000	5	-	-	-	-	-	-	2	10000	5
	IMEC	1	25000	23	-	-	-	-	-	-	1	25000	23
	ICHC	-	-	-	-	-	-	-	-	-	-	-	-
	IAA	4	166000	79	5	227500	57	10	765000	133	19	1158500	269
	IMCCV	-	-	-	-	-	-	3	226985	61	3	226985	61
	ID	3	146140	172	3	167000	38	-	-	-	6	313140	210
	HUILERIE	-	-	-	-	-	-	-	-	-	-	-	-
	AFF	-	-	-	-	-	-	-	-	-	-	-	-
	Total	15	717140	784	10	767500	145	18	1390035	412	43	2894675	1341

Table 6.8 contd

Ouardenine	IT	-	-	-	1	100000	50	1	200000	-	2	300000	50
	IME	-	-	-	-	-	-	-	-	-	-	-	-
	IMEC	1	20000	22	-	-	-	-	-	-	1	20000	22
	ICHC	-	-	-	-	-	-	-	-	-	-	-	-
	IAA	1	77408	-	1	29875	-	6	696777	132	8	804060	132
	IMCCV	5	559200	108	2	243000	58	1	129000	9	8	931200	175
	ID	-	-	-	-	-	-	-	49800	40	-	49800	40
	HUILERIE	-	-	-	-	-	-	-	-	-	-	-	-
	AFF	-	-	-	-	-	-	-	-	-	-	-	-
	Total	7	656608	130	4	372875	108	10	1075377	181	21	2104860	419
Moknine	IT	-	-	-	5	1311320	299	2	74000	15	7	1385320	314
	IME	-	-	-	4	41810	58	3	148690	21	7	190500	79
	IMEC	2	240100	105	-	-	-	-	-	-	2	240100	105
	ICHC	-	-	-	-	-	-	-	-	-	-	-	-
	IAA	1	64000	21	1	39000	53	6	199360	55	8	152360	129
	IMCCV	1	35000	21	2	140850	52	2	162400	45	5	338250	118
	ID	1	13000	20	2	48000	22	1	79000	25	4	140000	67
	HUILERIE	-	-	-	-	-	-	-	-	-	-	-	-
	AFF	-	-	-	-	-	-	-	-	-	-	-	-
	Total	5	352100	167	14	1630980	484	14	663450	1161	33	2446530	812
Teboulba	IT	2	30000	45	6	590440	172	5	721000	115	13	1381440	332
	IME	-	-	-	1	202700	54	2	47000	25	3	249700	79
	IMEC	-	-	-	-	-	-	-	-	-	-	-	-
	ICHC	-	-	-	-	-	-	-	-	-	-	-	-
	IAA	8	643000	149	-	-	-	3	193500	32	11	836500	181
	IMCCV	-	-	-	4	692000	67	-	-	-	4	692000	67
	ID	1	16000	3	1	73000	25	1	77520	24	3	166520	52
	HUILERIE	-	-	-	-	-	-	-	-	-	-	-	-
	AFF	-	-	-	-	-	-	1	480000	250	1	480000	250
	Total	11	729000	197	12	1558140	318	12	1519020	446	35	3806160	961

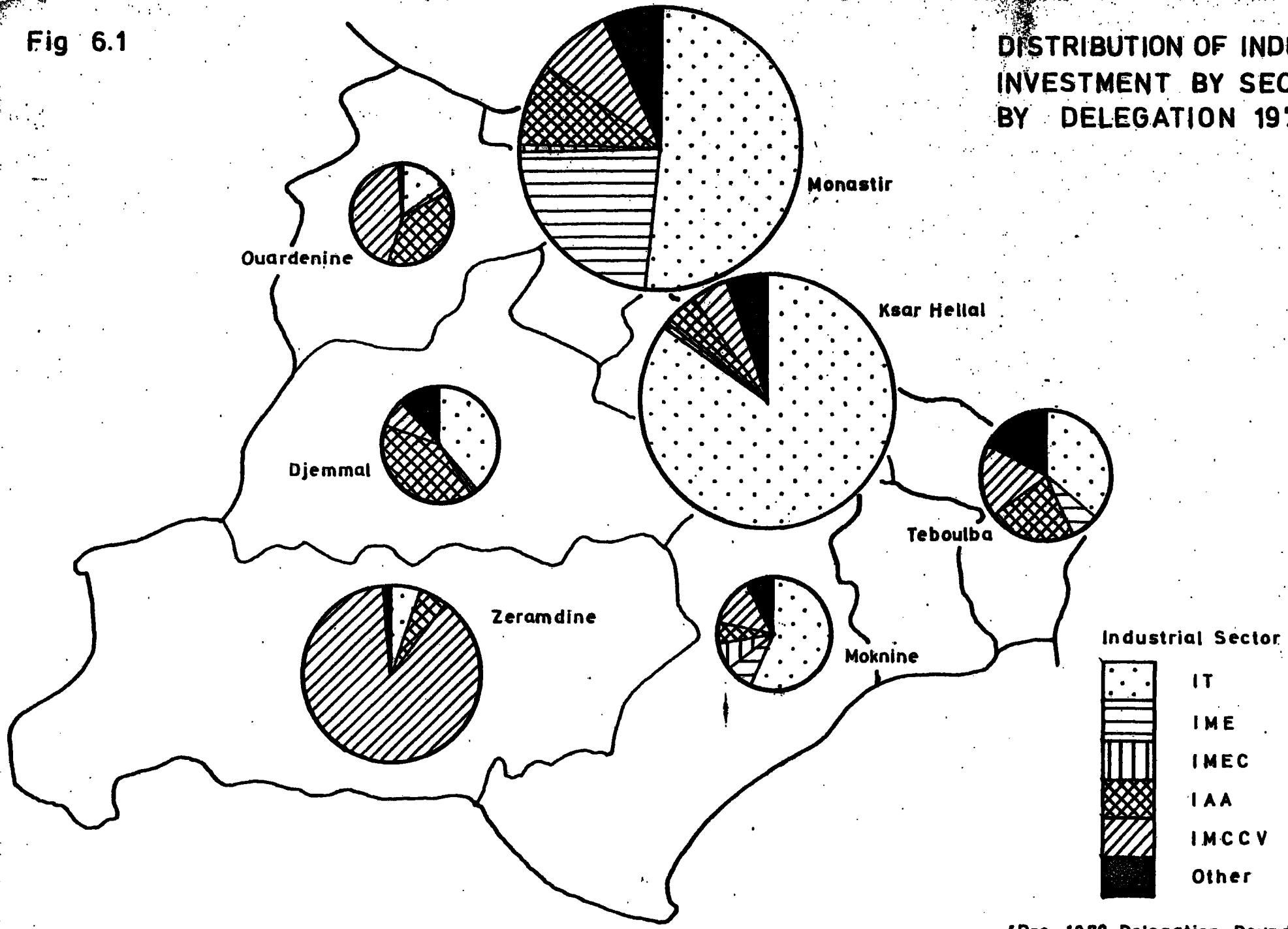
Table 6.8 contd

Zeramdine	IT	2	349000	89	-	-	-	-	-	-	2	349000	89
	IME	-	-	-	-	-	-	-	-	-	-	-	-
	IMEC	-	-	-	-	-	-	-	-	-	-	-	-
	ICHC	-	-	-	-	-	-	-	-	-	-	-	-
	IAA	-	-	-	2	156370	57	2	74200	25	4	230570	82
	IMOCV	3	5296500	405	-	-	-	2	546000	36	5	5842500	441
	ID	-	-	-	-	-	-	1	80430	89	1	80430	89
	HUILERIE	-	-	-	-	-	-	-	-	-	-	-	-
	AFF	-	-	-	-	-	-	-	-	-	-	-	-
	Total	5	5645500	494	2	156370	57	5	700630	150	12	6502500	701
Totals	IT	65	6038108	1853	77	15297465	2924	35	3800823	826	177	25136389	5603
	IME	3	10000	5	9	2155815	362	14	2178890	289	26	4344705	656
	IMEO	7	373100	200	-	-	-	-	-	-	7	373100	200
	ICHC	1	70000	15	-	-	-	-	-	-	1	70000	15
	IAA	19	2592129	346	13	674845	192	35	2290037	444	67	5557011	982
	IMOCV	22	6552500	800	18	2064850	364	12	1428385	180	52	10045735	1344
	ID	10	625640	295	20	887475	254	17	857850	325	47	2370965	874
	HUILERIE	1	13100	2	-	-	-	-	-	-	1	13100	2
	AFF	1	55500	56	-	-	-	1	480000	250	2	535500	306
	Total	129	16330070	3572	137	21080450	4096	114	11035985	2314	380	48446505	9982

Source: Monastir Governorate
Unpubl. Statistics

Fig 6.1

DISTRIBUTION OF INDUSTRIAL INVESTMENT BY SECTOR AND BY DELEGATION 1976-1978

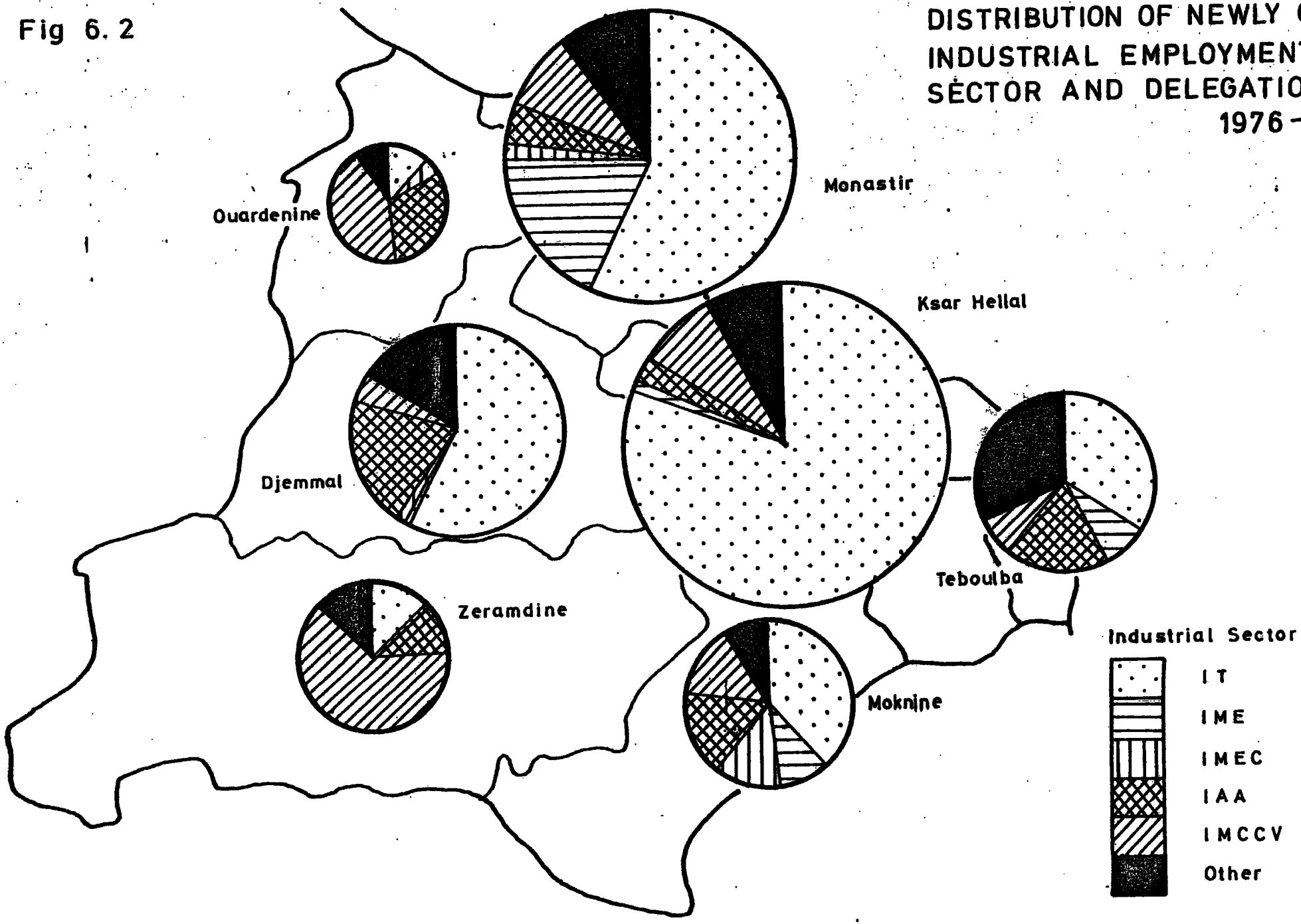


[Pre-1978 Delegation Boundaries]

Source: Monastir Governorate Unpubl. Stats.

Fig 6.2

DISTRIBUTION OF NEWLY CREATED INDUSTRIAL EMPLOYMENT BY SECTOR AND DELEGATION 1976-1978



[Pre 1978 Delegation Boundaries]

Source: Monastir Governorate Unpubl Stats.

for the five years 1977 - 81 - additional evidence for the over-optimistic forecasts) of which 32% will be in Ksar Hellal, 25.6% in Monastir and 13.5 in Djemmal (Table 6.9).

Table 6.9 Proportion of Industrial Projects Agreed by Delegation in Monastir Governorate 1976 - 78.

Delegation	No. of Projects (%)	Investment (%)	Employmen (%)
Ksar Hellal	44.2	28.5	32.0
Monastir	17.9	34.3	25.6
Djemmal	11.3	5.9	13.5
Ouardenine	5.5	4.3	4.2
Moknine	8.7	5.5	8.1
Teboulba	9.2	7.9	9.6
Zeramdine	3.2	13.5	7.0
	100	100	100

Source: Monastir Gvt Unpubl Stats.

Whilst it is accepted that urban areas will inevitably attract more industrial investment than will rural areas, it is clear that a disproportionate amount of investmen and job creation is going to Monastir and Ksar Hellal delegations. The predominantly rural delegations of Ouardenine, Zeramdine, Djemmal and Moknine have only 32.8% of the new employment opportunities, yet it is in these areas where employment is urgently needed. The API and the PDR offices must make more attempts to attract investment to these delegations. It is not as though the new industrial investments are necessarily taking advantage of economies of scale through being located in the urban areas, as most are small- to medium-scale concerns (table 6.10).and few of the projects require infrastructural benefits that are found only in certain locations. That it is feasible to locate major new industrial investment in rural areas is indicated

Table 6.10 Mean Number of Employment Opportunities Created in New Industrial Projects Agreed in Monastir Governorate 1976 - 78.

Sector	Average No. of Jobs Created/Project
IT	31.6
IME	25.2
IMEC	28.5
ICHC	15.0
IAA	14.7
IMCCV	25.8
ID	18.6
HUIL	2.0
AFF	153.0

Source Monastir Gvt. Unpubl. Stats.

by the success of the 5.3mTD construction material factory built in Zeramdine employing over 200 people. Whilst it is not recommended that all industrial investment encouraged to locate in the rural delegations be of this scale, there is no reason why more of the smaller industrial units could not be developed there.

Also disturbing is the dominance of investments made in the textile sector. More than 25mTD (52% of total investment), 5603 of the 9982 new jobs and 177 of the 380 projects were agreed for textile concerns. Most of the textile investment was for the delegation of Ksar Hellal, where 86% of the total investment in the delegation was for textiles. The only other sectors to receive a significant amount of investment are IMCCV (20.7% of total investment) and IAA (11.4%) industries. However, 50% of the IMCCV investment was allocated entirely to the Zeramdine project in 1976. In Chapter Three, an argument was propounded for the encouragement and development of agro-industries in Tunisia, particularly in the areas of grain storage, cold

storage, packaging and processing of fruit and vegetablesand in the olive processing industry. The latter three of these would all be relevant in Monastir; indeed, would be highly suited to the area, given its agricultural base. As just 11.4% of the total investment has been agreed in the IAA sector, the potential for its development would not appear to have been recognised. Not only is there scope within the existing economy (both in terms of inputs and outputs) for developments in this sector, but it has the additional advantage of being highly suitable for location in rural areas.

It will be noted in table 6.11 that the export industries attracted to Monastir under the auspices of the 1972 Laws are also dominated by textile firms, particularly clothing manufacturers. The main advantage to Tunisia from such firms being located in the country are the employment benefits that result. Conversely, industries attracted to Tunisia tend to be labour intensive and looking to take advantage of cheap labour. Unfortunately, the main industries which have consequently come to Monastir are the textile concerns, thus perpetrating the existing dominance of this sector. It is, however, other types of industry that should be encouraged, in particular those industries that facilitate technological transfer such as electronic industries. Although a start has been made in this direction (four electronics factories have been established), more effort needs to be made.

Fortunately, because the API and the PDR offices have a closer control on industries established under the 1972 Law than those established under the 1974 Law, several of the export industries have been persuaded to locate in rural areas. Certainly, none have found this to be a serious disadvantage to themselves, but, as will be demonstrated in

Table 6.11 Industries Established in Monastir Governorate Under the Auspices of the 1972 Law as of June 1979.

Delegation	Location	Activity	Employment
Monastir	Monastir	Jeweller	22
	Monastir	Clothes Manuf.	19
	Monastir	Clothes Manuf.	60
	Monastir	Electronics	80
	Monastir	Clthes Manuf.	43
	Bembla	Plastic Packaging	60
	M'Nara	Diamond Cutting	300
Ksibet El Mediouni	Ksibet El Mediouni	Diamond Cutting	67
	Touza	Diamond Cutting	41
	Bennare	Sports Clothes Manuf.	50
Moknine	Moknine	Knitted Wear	459
Ksar Hellal	Bou Hdjar	Clothes Manuf.	55
	Sayada	Clothes Lining	63
	Lamta	Working Clothes	60
Djemmal	Djemmal	Clothes Manuf.	203
	Djemmal	Clothes Manuf.	38
	Djemmal	Clothes Manuf.	167
	Djemmal	Clothes Manuf.	32
	Djemmal	Clothes Manuf.	70
	Djemmal	Clothes Manuf.	20
Zeramdine	Beni Hassen	Diamond Cutting	100
	Zeramdine	Diamond Cutting	120
	Zeramdine	Electronics	30
Ouardenine	Ouardenine	Clothes Manuf.	47
	Sahline	Clothes Manuf.	155
	Sahline	Clothes Manuf.	38
Teboulba	Teboulba	Electronics	12
	Teboulba	Electronics	12

Source: Monastir Gvt. Unpubl. Stats.

the following Chapter, because of the dominance of textile firms which prefer female labour, the location of some of these industries in the rural villages of Monastir has had far-reaching consequences on rural society.

What is more serious than the predominance of textile firms amongst the export industries, is the role of the PDR in perpetuating this dominance. Each year, a part of the PDR creation and consolidation of employment budget is allocated to rural industrial development (table 6.12).

Table 6.12 Proportion of PDR Creation and Consolidation Budget Allocated to Rural Industrial Development 1974 - 1980.

	%			
	1974-77	1978	1979	1980
Export Industry (site preparation and building construction grants)	33.0	-	-	-
Craft Industries	12.5	4.79	8.85	-
Diverse Small Trades	6.0	53.17	12.83	-
	51.5	57.96	21.68	0
Total C & C.E. budget (Dinars)	460502	240070	113000	155558

Source: PDR Unpubl. statistic 1980

An average of 8.7% of the annual creation and consolidation employment budget is allocated to craft industries. Close study of the data reveals that most of this goes to women working at home for the purchase of looms and raw materials. Whilst it is accepted that at the moment a market exists for the type of product made by these women (usually high quality clothes and carpets bought by tourists)

and that by encouraging them to produce at home the PDR is enabling some families to increase their incomes without encountering the social and family problems associated with going out to work in a factory, it is increasing the regional dependency on textiles, is causing over-production and is resulting in low prices and therefore low wages for the people employed in the sector. Although in principle there are numerous advantages to promoting a cottage industry, there is scope for investigating alternative areas which may be developed.

Fortunately, more foresight is being shown with regard to budgetary allocations for diverse small trades. Money from this part of the budget is being used to finance many small tradesmen enabling them to establish, re-equip or modernise their businesses. With trades ranging from blacksmiths to carpenters, and from bakers to moped mechanics, a wide range of indigenous small-scale trades are being established in villages, to the benefit of both producer and consumer. No new concern employs more than five people and most involve only one or two employees. It is this kind of development that is so important to rural development, for it builds a sound base upon which a solid future may rest.

g) <u>OTTEEFP:</u> Finally, in discussing the creation and consolidation of employment in the region, mention must be made of the OTTEEFP. Essentially, this office is a government funded agency and acts as a clearing house for the job market. People in search of a job register at an OTTEEFP office - main offices exist in each of the Tunisian governorates, with subsidiary offices at delegation seats. Registration entails filling in a form providing information on job skills and qualifications. This form is stored at the local

office, with a copy being kept at the governorate office. Details are also coded and dispatched to Tunis, where they are stored in a computer. Similarly, any employer looking for employees can register his requirements at the OTTEEFP which then attempts to match people to jobs. The OTTEEFP handles jobs not only within its own governorate, but, through the central facilities in Tunis, can assist people in finding jobs outside their own area of residence. It also helps Tunisians secure jobs in France, Libya and other European and Arab countries. It is not compulsory for people to register for employment, and no unemployment benefit is provided by the State. Consequently, not everyone who is unemployed registers with the bureau.

In terms of job placements, the OTTEEFP tends to operate independently. However, given its role, it is inevitable that firms being established under the 72 and 74 Laws use the OTTEEFP facilities to find labour in order to meet their needs. Indeed, it is one of the attractions to many foreign investors that a free employment agency of this kind exists in Tunisia.

The actions of the OTTEEFP in Monastir are summarised in Table 6.13.

From the table it is clear that the scope of the OTTEEFP activities in terms of job placement is limited. Nevertheless, it does play a significant role. On average, approximately 1500 people are assisted in finding jobs per annum. What is revealing from the table is the large number of people who remain in the category demande non-satisfaite relative to the number of people who use the service. However, this is more a reflection on the employment situation in the governorate than on the work of the OTTEEFP. It must be emphasised that the OTTEEFP in its employment role simply

Table 6.13 Principle Actions of the OTTEEFP Monastir Governorate 1975 - 1979

(Mean Monthly Figures)

	1975	1976	1977	1978	1979*
New registrations	225	272	356	289	280
Renewed registrations	183	289	508	425	402
Total registrations	408	561	864	714	682
Registered job offers	189	204	175	141	204
Job placements in Tunisia from local registers	n/a	n/a	97	78	129
Job placements in Monastir Gvt. of people from elsewhere in Tunisia	n/a	n/a	48	47	55
Total placements in Tunisia	164	177	148	125	184
Placements abroad	8	3	106	98	35
Total placements	172	180	251	223	219
Offers not met	145	70	n/a	114	128
Demand for jobs not met	1175	1438	2249	2129	1945

* Mean figures for January to September.

Source: OTTEEFP Monastir Governorate Annual Reports 1975 - 79.

helps people to find jobs, it does not create jobs.

6.2.2. Vocational Training

In addition to its job placement functions, the OTTEEFP plays a major role in helping young people acquire skills which will increase their chances of gaining employment. Moreover, formation professionelle is an integral part of the PDR and, inevitably, liason between the rural development authorities and the OTTEEFP in this area is close. In the field of vocational training, it is the OTTEEFP that plays the co-ordinating role; the agency itself is responsible for the day-to-day running of just five centres; the remaining 29 centre are divided between the Ministry of Agriculture, Ministry of Public Health, Tourist Office, National Craft Office, PDR, National Family Education Organisations, and various private organisations. (table 6.14).

Whilst it is evident that the centres are concentrated in the eastern, urban areas of the governorate, this must be accepted as inevitable, given the nature of such institutions. It is far more practical to locate a training centre in easily accessible locations than out in small villages. The important point is that the institutions are accessible to the population of the whole governorate (indeed, in one or two cases, the centres cater for national vocational training requirements such as the hotel training centre at Monastir). Many of the centres are residential or semi-residential and grants are available for students to attend such centres. Attempts are therefore made to ensure that location is not a causal factor in preventing young people attending the centres.

More disturbing than the spatial concentration is the sectoral concentration of the institutes. Although the kind of skills being developed in the governorate can be directly

Table 6.14 Vocational Training Institutions Monastir Governorate 1979 (excluding PDR centres)

Controlling Body	Location	Nature of Training	Capacity	Recruitment Conditions: Educ.* Level	Age	Length of Training
Min. of Agriculture (with PDR)	Djemmal	Market Gardening and Aboriculture	60	6e A.P.	15-17	2 yrs.
Min. of Agriculture	Monastir	Fishing	55	6e A.P.	16-20	1 yr.
		Marine Engine Mechanics		2e A5 + Prof.		1 yr.
Min. of Public Health	Monastir	Paramedics	140	4eA.S.+	18-25	1-3 yr.
Office de Tourisme	Monastir	General Hotel Training	150	4eA.S.+	14-21	11 mths
O.T.T.E.E.F.P.	Moknine	Carpentry	15	1eA.S.	17+	11 mths.
	Bou Hjar	Weaving	15	1eA.S.	17+	6 mths.
	Monastir	Cabinet Making	90	Carpentry Training	17+	11 mths.
	Ksar Hellal	Institute Superiers de Textile	50	Bac.	17+	2yr 6 mths.
	Bembla	Masonry	80	5eA.S.+	17+	6 mths.
Office National de l'Artisanat	Sidi Ameur	Carpet Making	20	-	14+	6 mths.
	Moknine	Carpet Making	20	-	14+	6 mths.
	Zeramdine	Carpet Making	32	-	14+	6 mths.
	Ouardenine	Carpet Making	20	-	14+	6 mths.
Organisation Tunisienne de l'Education de la Famille	Moknine	Primary Teaching	50	6eA.P.	14+	-
	Monastir	Secondary Teaching	300	1e-7e A.S.	15+	-
	Ksar Hellal	Secondary Teaching	50	6eA.P.	14-17	1 yr.
Private Education	Sidi Ameur	Carpet Making	50	-	14+	1 yr
	Monastir	Crafts, French & Technology	50	6eA.P.	14+	2 yr
	Monastir	Art and Crafts	60	6eA.P.	14+	6mths-18mth

* A.S. Secondary education.
A.P. Primary education.
Bac Baccalauréat

Source: Min. des Affaires Sociates, Unpubl. data.

related to the existing industrial situation, the skills being developed are basically traditional ones, again particularly related to the textile sector. With the exception of the agricultural centres and the hotel centre, no attempt is being made to provide a wider range of new skills which, if they existed, would act as a pull to new industry for the region. The preceding section argued strongly for diversification of the industrial base. Surely one of the easiest ways to do this would be to establish a base of skilled labour in the new industries which need attracting. Indeed, if people were trained in certain skills, then this would encourage them to set up their own businesses, albeit on a small scale. Such a move could be facilitated if small grants were made available by the governorate, and would contribute to the philosophy of developing an economy from the bottom up, and of letting things grow out of the indigenous base, rather than imposing alien structures from outside. The kind of skills which should, perhaps, therefore be developed are mechanical skills, metal working, electronics and machine maintenance - ie skills that will help the region move away from its excessively traditional base.

This sectoral imbalance is even worse in the vocational training centres funded by the PDR and established with the aid of the OTTEEFP. The PDR allocates a substantial proportion of its budget to formation professionnelle (table 6.15).

Table 6.15 Proportion of Annual PDR Budget Allocated to Vocational Training Monastir Governorate 1974-1978.

	%
1974	13.3
1975	17.6
1976	14.0
1977	7.5
1978	12.7
1979	11.2
1980	10.7
Mean	11%

Source: PDR Monastir, Unpubl. statistics

This represents a total of 643,316TD which is spent on

i) establishing centres

ii) staffing centres

iii) providing grants enabling students to attend

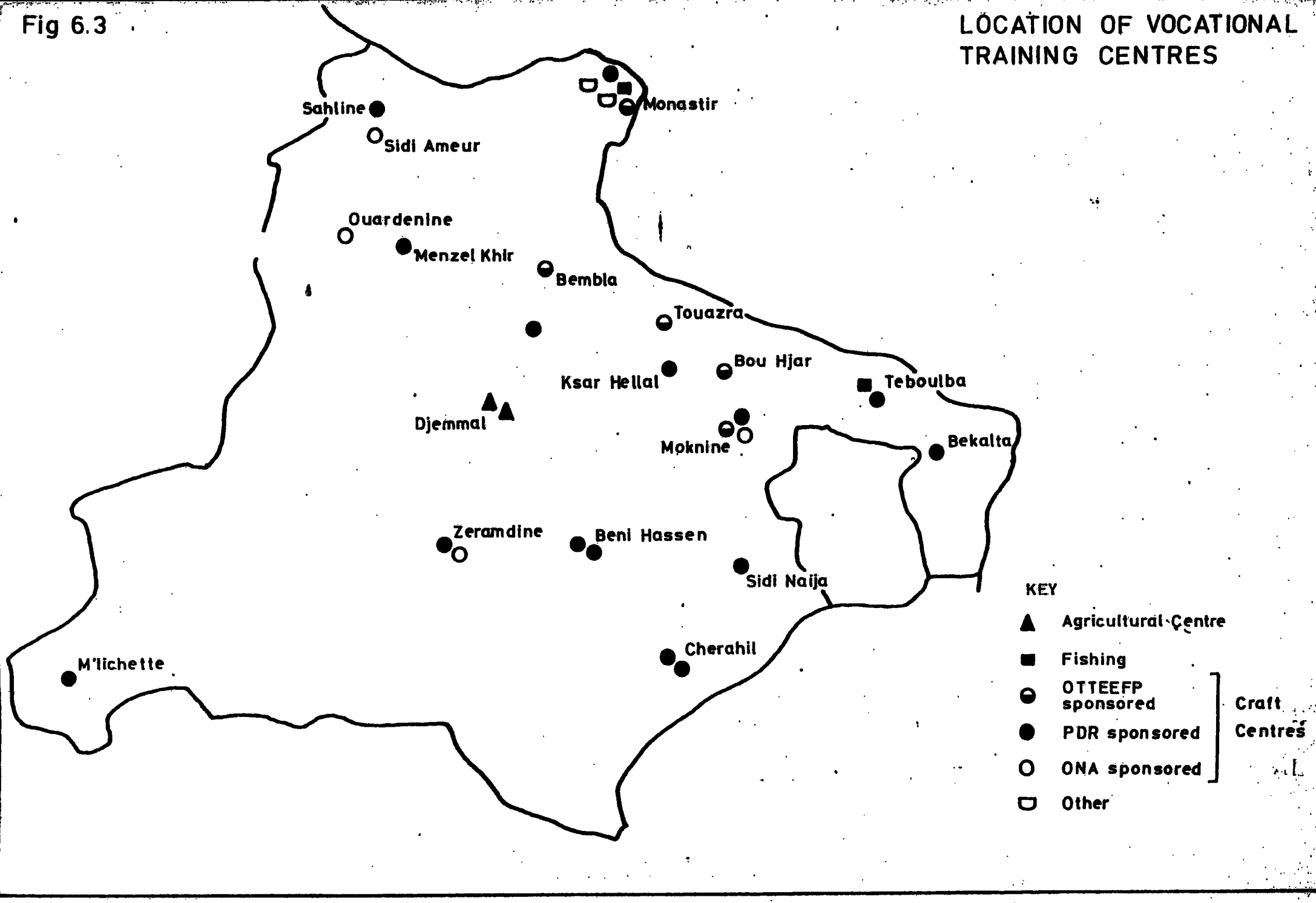
A large part of this money is spent on running 15 artisanat centres (figure 6.3), all of which are for women. The logic of putting so much investment into perpetuating the textile sector really does need to be questioned. In the preceding section it was accepted that small-scale cottage industry-type textile concerns do have certain benefits, but the necessity to spend large amounts training women in skills which have successfully been passed from generation to generation over the years is dubious. It would surely be of greater benefit to shift the emphasis toward developing other skills that would be applicable in other small-scale rural sector activities. The PDR has certainly acknowledged the need for training people in such skills - viz. the agricultural mechanic centre at Djemmal, the marine engine mechanic training centre at Teboulba, the centre for serriculture at Monastir and the carpentry centre at Ksibet El Mediouni.

The concept of a formation professionnelle programme is excellent. Not only does it provide young school leavers with positive skills to offer on the job market, but it also develops the labour resource of the region, thus making it a more viable and attractive prospect for potential employers. However, in the context of Monastir, it is clear that the potential of the programme is not being fully realised. A shift in priorities from the textile sector must be made for the full value of formation professionnelle to be realised.

A second problem, noted by Gacem, is that there is often

Fig 6.3

LOCATION OF VOCATIONAL TRAINING CENTRES



no way of ensuring that people who successfully complete job training stay in the region (Gacem 1979). It has been found, particularly at the centre de mécanique naval, that almost 50% of the youths who complete their training use their newly acquired skills to get jobs in Europe. It is therefore essential that the governorate in some way ensures that their investment in vocational training is paid back into the region.

6.2.3 Marketing and Credit

Unfortunately, no details are available on these two subjects. Nevertheless, they are an important part of the economic component and some comment is therefore needed on them.

No organised structure exists in the region for the marketing of agricultural products. Although OMIVAN is trying to introduce a kind of marketing co-operative, this obviously only affects the périmètres irrigués. Otherwise, marketing is very informal. On the whole, produce is taken to any of the nearest large markets for direct sale to consumers. No system of wholesaling would appear to exist. For transport, farmers often share a truck to take goods to the market. Such informal co-operative efforts seem to work very well and often enable farmers to take produce to markets where the best prices are being offered - even if this entails trips to Kairouan or Tunis.

The limited pricing policy that exists in Tunisia was discussed in Chapter Three. In view of the potential value of a successful price and subsidy policy, it would be advantageous to the PDR organisers to give greater consideration to the application of such tools in order to assist the promotion of both agricultural and rural industrial development.

Certain credit arrangements relevant to the PDR have been mentioned throughout the discussion of the economic component. However, it is useful to summarise these credit sources and their availability, primarily because credit facilities can be a major

catalyst for development. Obviously, the main source of credit is the PDR itself, which has money available for grants, loans and direct investment. However, such money is available only for projects directly related to the rural development plan. This applies also to credits from FOSDA, OMIVAN, and PAM 482. If credit is required by farmers or other people in rural areas for actions not directly related to fixed plans, then the Banque Nationale de Tunisie (BNT) has money available for such credits. Loans from the BNT are subject to higher interest rates and more formal pay-back requirements than are the other agencies. Finally, specialist producers, such as olive growers, may get credit from the government monopoly agencies, such as the Office National de l'Huile. Credits from such organisations are inevitably tied to their particular area of concern.

Given the limited economic resources of Tunisia, it is in many ways astounding that as much credit as is made available does exist. However, as it does, the rural population is able to take full advantage of it to its benefit. The one criticism to be made is that credit terms are sometimes too lax, particularly from the PDR and OMIVAN, and farmers in particular tend to lapse on their payments or become financially over-committed.

6.3 The Social Component

A programme for the development and improvement of the less tangible social aspects of rural development is also a vital part of an IRD programme. Its necessity is well recognised in Tunisia and amélioration des conditions de vie is the largest (in terms of investment) part of the PDR, for

> 'il s'agit de démystifier une mode de vie qui jusqu'à quelques années était un privilège des habitants des villes et que les habitants des zones rurales ont toujours regardée avec envie' (Gvt. de Monastir 1978, p.8).

In Monastir the amélioration des conditions de vie programme

includes housing, education, health, youth and sport, cultural developments, improvement of water and electricity supplies and extension of roads and tracks. The latter two will be considered under the infrastructural component. As with the elements of the economic component, it will be shown that again the PDR, although not always carrying out most of the action, is firmly placed at the centre of rural social planning and activity, co-ordinating the actions of bodies such as the Ministries of Health and Education.

With the exception of 1978, Monastir PDR budget allocation for the improvement of rural living standards has averaged approximately 50% of the total annual budget (table 6.16).

Table 6.16 PDR Rural Living Standards Improvement Budget
Monastir Governorate 1974 - 1980

Year	Dinars	% of Total PDR Budget
1974-77	1436090	51.3
1978	245398	35
1979	370300	53
1980	338983	48.5

Source: PDR Monastir
Unpubl. statistics

Expenditure im this particular area thus accounts for the greatest proportion of the overall PDR budget.

6.3.1 Housing

Housing conditions throughout the rural areas of the governorate are extremely varied. As demonstrated in the following Chapter many of the villages of Monastir governorate have, in effect, become suburbs of Sousse and Monastir. A wave of housing modernisation and construction is being funded by a

new class of village worker and, as a result, extremely comfortable one-and two-storey villas are now prominent in settlements such as Maatmar, Sahline, Ouardenine, Khniss, Lamta, Sayada and Teboulba. However, such developments are by no means universal, and housing of a very low quality can still be seen throughout the rural region. In Sidi Bou Othman, for example, there is a community of some ten to twelve families living in shelters of twigs, rubber tyres and corrugated iron. Many of the labourers working for the larger landlords live in similar shacks on the land they work. Whereas this represents the other extreme to the new villas, the majority of rural housing lies somewhere on the spectrum between the two, but heavily weighted towards the shacks. For the majority of the rural population, their housing consists of single-storey courtyard houses with two or three rooms. Rarely is there any piped water or electricity, and drainage is either to the street, or to a cesspit within the building area. Animals are quartered in the courtyard over night.(1)

Since independence, there has been an attempt from the regional authorities to improve rural housing. Initially the rural housing programme was aimed at sedenterising nomads from the Steppes of Tunisia, but gradually the emphasis shifted to re-housing members of the rural population who inhabited some of the worst quality housing. What the government did was to construct groups of houses that really are no more than concrete boxes. Comprising two rooms, plus separate kitchen and bathroom, with a small enclosed area outside the house, these houses (maisons populaires) are certainly not palatial, but as they usually have electricity and piped drinking water and are soundly constructed of bricks and cement, they are a

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(1) For more precise details of housing conditions, see the following Chapter.

considerable improvement to what people had previously been living in.

The programme started after independence has changed little, the only changes being a drop in the quality of houses constructed - they are now slightly smaller and less substantially constructed, and, that since 1974, responsibility for rural housing has fallen under the control of the PDR. Since that time the PDR has paid for the construction of 1048 houses dispersed throughout the governorate of Monastir (table 6.17).

This programme has represented a total cost of 196000TD. From 1974 to 1977, the average cost to the PDR per house was 184TD and from 1978 to 1980 the average cost has been 200TD. This obviously is insufficient to pay for the construction of a house. What happens is that the PDR will arrange for X number of houses to be built in a village. These will then be offered to people who it has been decided by the PDR are in urgent need of new housing. In certain cases the PDR will deduct anything up to the full 300TD from the deposit. The cost to the PDR, summarised in table 6.17, is therefore the sum of deposits waived. In this way, families can be rehoused in accommodation which, although not of a very high quality, is certainly a lot better than that to which they have been accustomed, and through these financial arrangements, they do not find themselves over-burdened financially with repayments. If the houses prove inadequate to a family, then there is nothing to prevent them building their own extensions to the front or back of the house - space is usually made available with this in mind when houses are originally constructed.

In addition to the housing construction programme, the PDR will allow grants of up to 200TD/person for rural housing improvements. Budgetary allocations for this are summarised in table 6.17.

Table 6.17 PDR Contribution to Rural Housing Monastir Governorate 1974 - 1980

Year	Houses Constructed	PDR Budget Allocation (TD)	Houses Improved	PDR Budget Allocation (TD)	Total Houses	Total Budget	% of Living Standards Improvement Budget
1974-77	848	156000	198	35000	1046	191000	13.3
1978	100	20000	100	20000	200	40000	16.3
1979	50	10000	50	10000	100	20000	5.4
1980	50	10000	50	10000	100	20000	5.9
Total	1048	196000	398	75000	1446	271000	

Source: PDR Monastir Unpubl. statistics

The rural housing redevelopment scheme is meeting with considerable success in that it is helping towards the improvement of housing conditions for the rural population in Monastir. A total 1048 new and 398 improved houses also indicates that it is a quite substantial programme. Indeed, most communities of the governorate can be seen to have at least twenty of these maisons populaires.

6.3.2 Health

Health care and medical service provision have been high on the list of priorities of the Tunisian government since independence, and this fact is reflected in the level of services found in Monastir governorate. In essence there are three levels of health care in Monastir; hospital, dispensaire (surgeries often permanently staffed with at least one nurse, with a doctor visiting once, or more often, a week, depending on the size of community served) and salle de soin (a treatment centre which is really no more than a first aid centre, but staffed normally every morning, by a nurse).

Four hospitals exist in the governorate (table 6.18). of which one (Monastir) is attached to the Faculty of Medicine and therefore exists also as an important teaching and research centre. Inevitably, these few are located in the larger towns of the region. It is the dispensaires that are of main concern to this discussion. One dispensaire is found at each delegation seat; in addition, dispensaires are located in most villages of significant size throughout the governorate. The amount of time these are staffed and the frequency of doctors' visits depends on the size of the local population. The dispensaire at Menzel Khir, for example, has a permanent nurse with a doctor's visit twice a week, whereas at Sidi Bou Othman there is no nurse and the doctor holds a surgery just once a week.

Table 6.18 Health Service Monastir 1979

Delegation	University Hospital	District Hospital	Bed Capacity	Dispensary	Salle de Soin	Prevention Centre
Monastir	1		238	4		1
Ouardenine				6		1
Ksar Hellal		1	73	3		
Moknine		1	30	6	1	
Teboulba				1		
Djemmal		1	30	5		
Zeramdine				4		
Ksibet El Mediouni				4		
Bekalta				1		
Totals	1	3	371	34	1	2

Source: Min. de l'Int/Gvt. de Monastir 1979d

Whilst it is accepted that this kind of medical cover is not perfect, it does make the best use of limited resources and ensures that the rural population has regular, easy access to doctors. It must also be noted that the number of dispensaries is being extended; by 1981, new dispensaries will have been built at Khniss, Bembla, Beni Hassen, Menzel Kamel, Ksibet El Mediouni, Bennane, Chrahil and Sahline (Min. de l'Intérieur/ Gvt. de Monastir 1979d).

Although, obviously, health services are the responsibility of the Ministry of Health, the PDR plays a significant role in the development of these services in rural areas. Locations for dispensaires and salles de soin are determined after consultation between the Ministry and PDR officials. Part of the PDR amélioration des conditions de vie budget is allocated to the construction and development for these services (table 6.19). This therefore ensures that rural health services are located in the most effective places.

Provision of health services such as surgeries is important but insufficient in itself; support facilities such as research, education and technical resources are also essential. The Monastir health programme is based not only on curative medicine but includes important preventative work, based at the University Hospital, Monastir. The preventative element comprises vaccinations, education and information services, particularly on transmissable diseases, and a nutrition programme which aims to raise food-intake levels (qualitative and quantitative) in the region.(1) Moreover, the presence of a major medical research and training centre in Monastir town ensures a wide provision of research and specialised facilities. The one restriction in this respect is the lack of medical

(1) In a conversation with Dr. W. Cambell, himself one of the doctors visiting the dispensaires, it was reported that standards of nutrition in the region were exceptionally high and that evidence of malnutrition was almost completely lacking.

Table 6.19 PDR Contribution to Health Cover Monastir 1974 - 1980

Year	Service	Location	Contribution (Dinars)	
1974-77	Dispensary (new)	Mlichette	10000	
		Touazra	10000	
		Bekalta	10000	
		Layada	10000	
	Dispensary (equipping)	Chrahil	4000	
		Sidi Bou Othman	5000	
		Maatmar	4000	
	Salle de soin	Bodheur	4000	not completed as Of 1979
		Menzel Khir	4000	
		Bir Taieb	5000	
		Menzel Hayet	5000	
		Guenada	5000	
		Tiayra	5000	
		Meojed Aissa	5000	
	Family Planning	whole governorate	20000	
1978		nil		
1979		nil		
1980	Dispensary (x 2)	not specified	25000	

Source: PDR Monastir Unpubl. statistics.

specialists in Monastir to actually serve the people, primarily due to the fact that all the specialists are teaching. However, the faculty at Monastir is new and should soon be producing sufficient specialists for the country as a whole.

The second major part of the health programme relates to family planning. The significance of the family planning movement in Tunisia, and its progress since independence, has been discussed and its problems analysed in Chapter Three. Family planning is recognised as an important part of the development of Monastir, and a great deal of effort is put into educating people on the benefits of contraception, along with the various alternative methods available. In addition to permanent family planning clinics at Monastir and Ouardenine, the Office National du Planning Familial et de la Population operates a number of mobile family planning units in the Sahel which visit the villages of the area. The visit of one such unit to Ksibet El Mediouni has been described (Brown 1981). On one given day (previously publicised), a man and a woman from the ONPFP went around from house to house explaining the family planning programme. At the same time a local community leader drove around the town in a car with a loudspeaker exhorting people to use contraceptives and to come to a public meeting that night in the maison du peuple. The meeting was led by local dignitaries with family planning officials; 50 people only attended.

Brown summarises the qualitative impact of the family planning programme in Ksibet. Amongst the men, there seemed to be a certain degree of resentment at the way in which family planning seemed to be forced upon them. The basic attitude seemed to be that people calculate the number of children that they want to have in terms of needs, interests and values and try to realise their ideal family size by the means at their

disposal. They do not always succeed, sometimes not out of ignorance. Moreover, there is no reason to believe that husbands and wives discuss these matters.

As for the women, because of increasing education and employment opportunities, it would appear that they are gaining a greater degree of control over their own lives, and this in turn is contributing to a decline in fertility.

The evidence cited from Ksibet El Mediouni suggests that the ideas and practices of birth control are a good deal more rational/intentional than students of Muslim societies normally assume. In Tunisia, Islam does not form an obstacle to family planning; indeed, its tenets are often used to encourage it. It would seem that the family planning issues are principally social and economic. Those who tend to support the programme usually share one or more of the following characteristics:

- active participation in the Party
- educated, westernised and economically secure
- relatively young and mobile
- living away from the extended family.

These people form a minority of the town's population. Those opposing family planning are generally:

- poor
- quick to express confidence in God
- worried about being cared for when old and sick
- sedentary
- oppositionals

However, Brown does emphasise the fact that most people are somewhere between these two extremes.

Despite the above reservations, there can be no doubt that the family planning programme is having some effect in the governorate. It is estimated that, in 1978, there were 31000 married women of child-bearing age in Monastir governorate

(Min. de l'Int/Gvt. de Monastir 1979d).Of these, 11.5% had accepted and were using contraceptives of some kind or another (table 6.20).

Table 6.20 Activities of the Family Planning Programme Monastir Governorate 1977 - 78.

	No. 1978	Rate per 1000 Women of Child Bearing Age 1978	1977
No. of consultations	22981		
New acceptances	3530	113	109
Sterilisations	1106	34	n/a
Use of Pill	1066	34	34
'Social abortions'	548	18	18
Ligatures des trompes	918	29	9
Other Methods	929	30	n/a

Source: ONFPP 1977

However, although progress is noticeable, there is still scope for improvement on the 11.5% of women using contraceptives. It must be emphasised, though, that a decrease in the natural birth rate that has been noticed throughout Tunisia over recent years, although partly attributable to the family planning programme, is also partly a result of changes in the marriage age and the changes in the age structure (increasing numbers of people in the < 20 age group) (Lapham 1970).

The family planning programme in Monastir, as with the rest of the health programme, receives assistance from the PDR. Between 1974 and 1977, 20000TD were allocated to family planning from the amelioration des conditions de vie budget. Since 1977, however, this flow of cash has ceased, probably because of the increased importance attached to family planning since 1976, when the ONFPP received larger state budgets.

6.3.3 Education

The importance attached to education by Bourguiba and

his government since independence has been discussed in Chapter Three. The whole country has seen a rapid spread of education such that primary education is now available, in some form or other, to all children. Throughout the expansion of education, Monastir governorate has always held a place of honour in this field, and has often been the leader in educational developments.

By 1979, the total number of school children in the governorate was 61091, or 24.8% of the total population. Of these, 47342 were at primary school, which represents an eight-fold increase since 1955 - 56. Parallel to the growth of primary school children has been a growth in teachers and schools; 1296 teachers in 1979 (compared to 224 1955/6) and 82 schools (30 in 1955/56). The provision of primary education in Monastir now extends to every village and town in the governorate, and it continues to expand to meet the ever-increasing population. The regional education authorities estimate that an average of twelve new locaux (premises) need to be provided annually to meet growing demand; in fact, 1978/79 saw the creation of 30 new locaux with 5 new schools opening 1979/80. Staffing of these schools is not proving to be a problem in Monastir governorate because teachers do not suffer as they do in other regions of the country from excessive remoteness. Where this problem does exist, it is often found that primary school teachers can be recruited from the local population, amongst people who are happy to remain in their home village.

The situation with regard to secondary education is also good, although the drop-out rate from primary to secondary school is high - for a number of reasons. The system of education in Tunisia is based on that of the French, whereby, in order for pupils to proceed to the next scholastic year, exams at the end of the present year must be taken and passed. Fairly high failure rates encourage 'drop-outs'. In addition,

socio-economic pressures, particularly on girls, push children out of school to go and work in the new textile factories, or to go to the centres de formation professionnelle for vocational training. Consequently, the demand for secondary school places is not as great as for primary schools. However, with four secondary schools in Monastir town, and others in Djemmal, Ksar Hellal, Ouardenine, Teboulba and Zeramdine, secondary education facilities in the governorate are perfectly adequate and, important in terms of rural development, easily accessible to all parts of the governorate.

As with primary education, the need to expand secondary education capacity is recognised. During the period of the V Plan it is anticipated that the schools at Ouardenine and Zeramdine will receive substantial new investment for expansion (approximately 50,000 TD each per annum). The schools at Teboulba, Moknine and one of the Monastir colleges will receive cash to extend their facilities and it is planned that a new school will be built at Sayada. (Higher education facilities were discussed in the previous chapter).

Thus a complete and thorough base exists for formal education in Monastir governorate. Whilst not suggesting that it is perfect, given the limited resources available in the country, and given that the education system was, in effect, constructed from nothing, it represents a considerable asset in terms of the development of the region as a whole, not only the rural areas. (Formal scholastic education is one aspect of rural development to which the PDR does not contribute - it is entirely in the hands of the Ministry of Education).

6.3.4 Community Development

Giving rural communities some form of identity and some

means of self-expression through communal activities was argued as being very important to rural development (Chapter Two). Formal institutions (religious and political) which partly serve this function were discussed in Chapter Four. There remains, however, another aspect - that of social institutions - informal groups which enable groups of people with particular interests to meet and 'socially interact'.

Kraiem has noted that there already exists in Monastir governorate, a strong 'esprit de cheptel' amongst the villages (Kraiem 1978). This is being fostered, and special interest groups encouraged through a part of the amélioration des conditions de vie programme of the PDR which is concerned with youth, culture and sport (table 6.21).

The above programme is carried out in conjunction with the regional divisions of Jeunesse et Sport and of Culture et Information, both of which are sub-divisions of the governorate offices.

Perhaps the most important part of the programme are the maisons du peuple, for not only do these provide meeting places for political meetings, but they act as community halls for all kinds of communal gatherings such as family planning meetings.

To find resources devoted to youth clubs and sports facilities in a programme based on fairly limited means is somewhat surprising. However, the provision of youth clubs and equipment for them (such as chess sets, table tennis tables, televisions etc.) has provided young people of rural areas with something to do and it would appear that it does, to a certain extent, help with easing the drift of young people from the rural areas to the towns.

But without doubt, the main value of this programme is the way in which it provides a communal identity to the population of villages. Encouragement of such an esprit facilitates any

Table 6.21 PDR Monastir 1974 - 1980 Youth, Culture and Sport

	Activity	Location	Cost (TD)
1974-1977	8 Youth Clubs	(not specified)	36090
	6 Maisons du Peuple	"	19000
	3 Sports Areas	"	not specified
	Miscellaneous Equpt. for clubs and cellules		
	Construction of a market	Khniss	12000
		total	117090
1978	3 New Socio-cultural centres	Sidi Naija, Oued Jebs, Menzel Hayet	15000
	Misc. eqpt. for rural clubs	not specified	7350
	Volunteers Programme	all gvt.	4000
		total	26350
1979	Volunteer Programme	all gvt.	4000
	Const^{n} of Socio-cultural centre	not specified	10000
	Eqpt. for clubs	not specified	5000
	Management of sports areas	not specified	8500
		total	27500
1980	Volunteer Programme, Library, Construction of 3 socio cultural centres, Eqpt. for clubs, Management of sports areas	not specified	not specified
		total	44850

Source: PDR Monastir Unpubl. statistics

development programme, for it encourages participation, one of the key elements for the success of any IRD programme.

6.4 Infrastructure Component

Many aspects of what could be classified as infrastructure have already been discussed (eg schools and health services). There still remain the transport element and the provision of utilities such as water and electricity.

The provision of physical infrastructure is crucial to the overall development process. In the case of the construction of buildings and the supply of utilities, it creates a tangible base from which the less tangible elements of development may grow. In the case of transport, the means through which the spatial interaction of people, goods and services, so important to development, is established. Transport facilities are particularly important to rural development because of the spatial isolation that is inherent in rural areas. It is essential to integrate rural society into the national society and economy and the most fundamental, but by no means only, means of doing this is to ensure adequate intra-rural and rural-urban accessibility.

6.4.1 Transport

Since 1974, considerable importance has been attached to the improvement of roads and pistes (tracks) in the rural areas of the governorate and substantial parts of the PDR budget have been allocated for this purpose (table 6.22). The money is provided from the amélioration des conditions de vie budget and, as is clear from the table, it could be considered a disproportionally large fraction considering the need for the development of other services, particularly drainage and sanitation, for which there is no provision whatsoever in the rural areas of the region. However, the result has been to provide the entire governorate with an excellent network of primary routes with tarmac surfaces (figure 6.4). In addition, the rural areas are criss-crossed with

Table 6.22 PDR Expenditure on Routes and Pistes Monastir Governorate 1974 - 1980

Year	Cost (TD)	% of improvement of living standards budget	Details
1974-1977	499150	34.7	144.2kms., of which 115km improved pistes 9 culverts 29.2kms tarmacadam
1978	71500	29.2	5kms tarmacced roads 14.5kms improved pistes 2 culverts
1979	139000	37.2	3kms. tarmacced 63.2kms improved pistes 2 culverts
1980	90000	26.5	20.25kms improved pistes 2kms. tarmacced

Source: PDR Monastir unpubl. statistics.

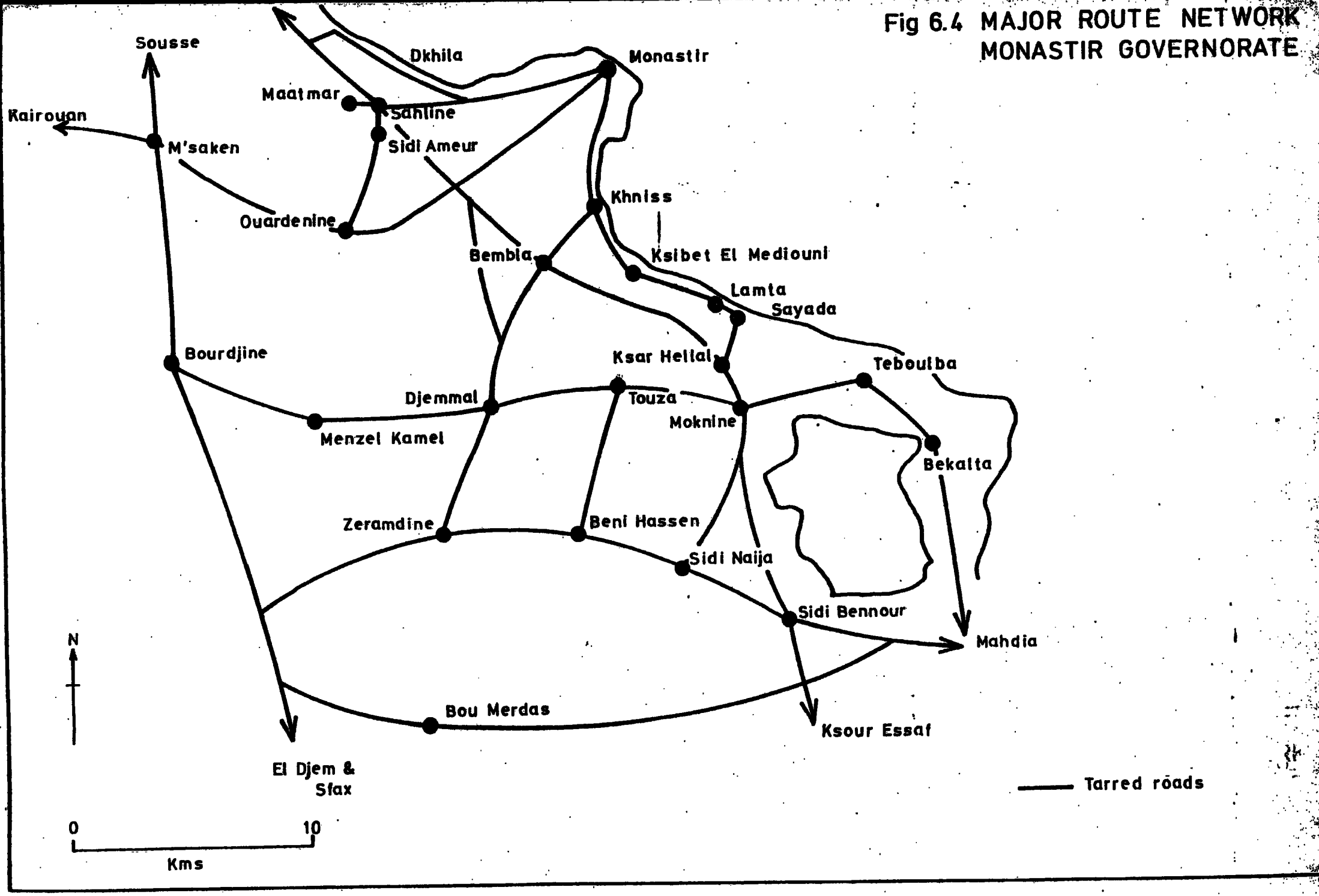


Fig 6.4 MAJOR ROUTE NETWORK
MONASTIR GOVERNORATE
Sousse
Dkhila
Monastir
Maatmar
Sahline
Kairouan
M'saken
Sidi Ameur
Khniss
Ouardenine
Bembia
Ksibet El Mediouni
Lamta
Sayada
Bourdjine
Ksar Hellal
Teboulba
Djemmal
Touza
Moknine
Menzel Kamel
Bekalta
Zeramdine
Beni Hassen
Sidi Naija
Sidi Bennour
Mahdia
N
Bou Merdas
Ksour Essaf
El Djem &
Sfax
Tarred roads
0
10
Kms

a network of pistes. Although these do not have metalled surfaces they are well laid, with a mixture of gravels and sands, are rolled and, although pitted in places, provide a surface suitable for heavy vehicles, even during periods of heavy rain.

Whilst acknowledging that in a relatively short time, the PDR has established an excellent route network throughout the governorate, the priority with which the programme has been dealt could be questioned. Such a rapid development of roads and pistes was perhaps not so necessary, particularly given the fact that there are other areas in which no budgetary allocation has been made. A route programme that would have taken twelve years instead of six, thus freeing, say, 40% of the nearly 800,000TD spent on roads and pistes, would not really have been a serious hold-up to progress in the area, yet it would have released some 320,000TD for other necessary works such as drainage.

Motorised vehicle ownership in the rural areas of Monastir governorate is restricted to the occasional Peugot truck (often shared between families) and a large number of mobylettes. Communications between villages and from villages to towns is, therefore, highly dependent on public transport. To their credit, the PDR and the regional public transport company (STS) have created a highly efficient, cheap and regular network of bus services (figure 6.5). As is clearly shown in the map, all major settlements of the governorate are served by regular bus service and, indeed, many of the smaller villages are also on regular bus routes (Jedidi 1976).

The existing rail network in Monastir was described in the previous Chapter where it was noted that Monastir governorat had been bypassed by the main Tunisian rail network. However, by 1985, a new rapid transit metro railway will be opened, linking Monastir and Mahdia (figure 6.6). Although not affecting the mor rural areas of the governorate, the construction of this service has to be noted, for no doubt once opened, bus routes from rural

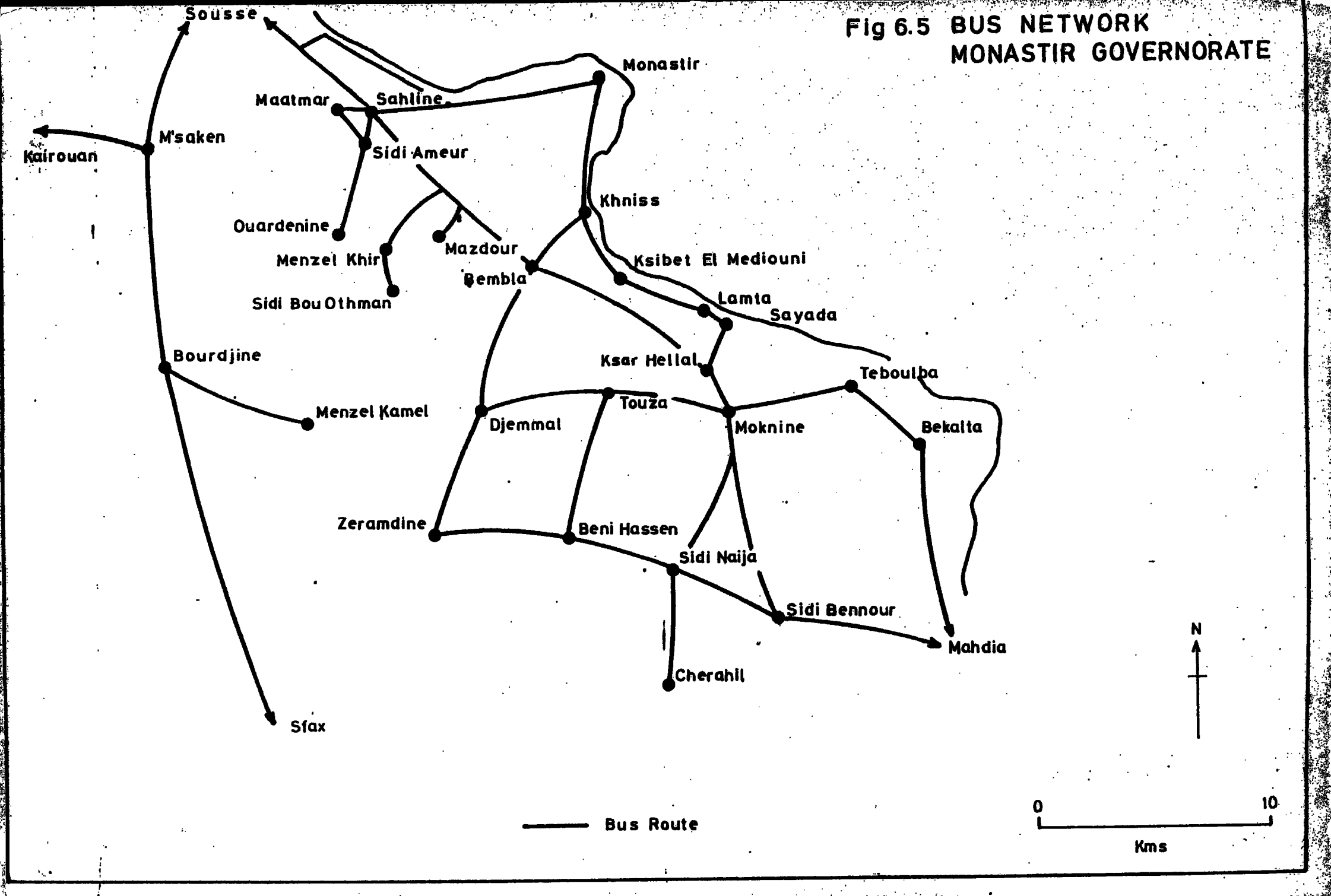
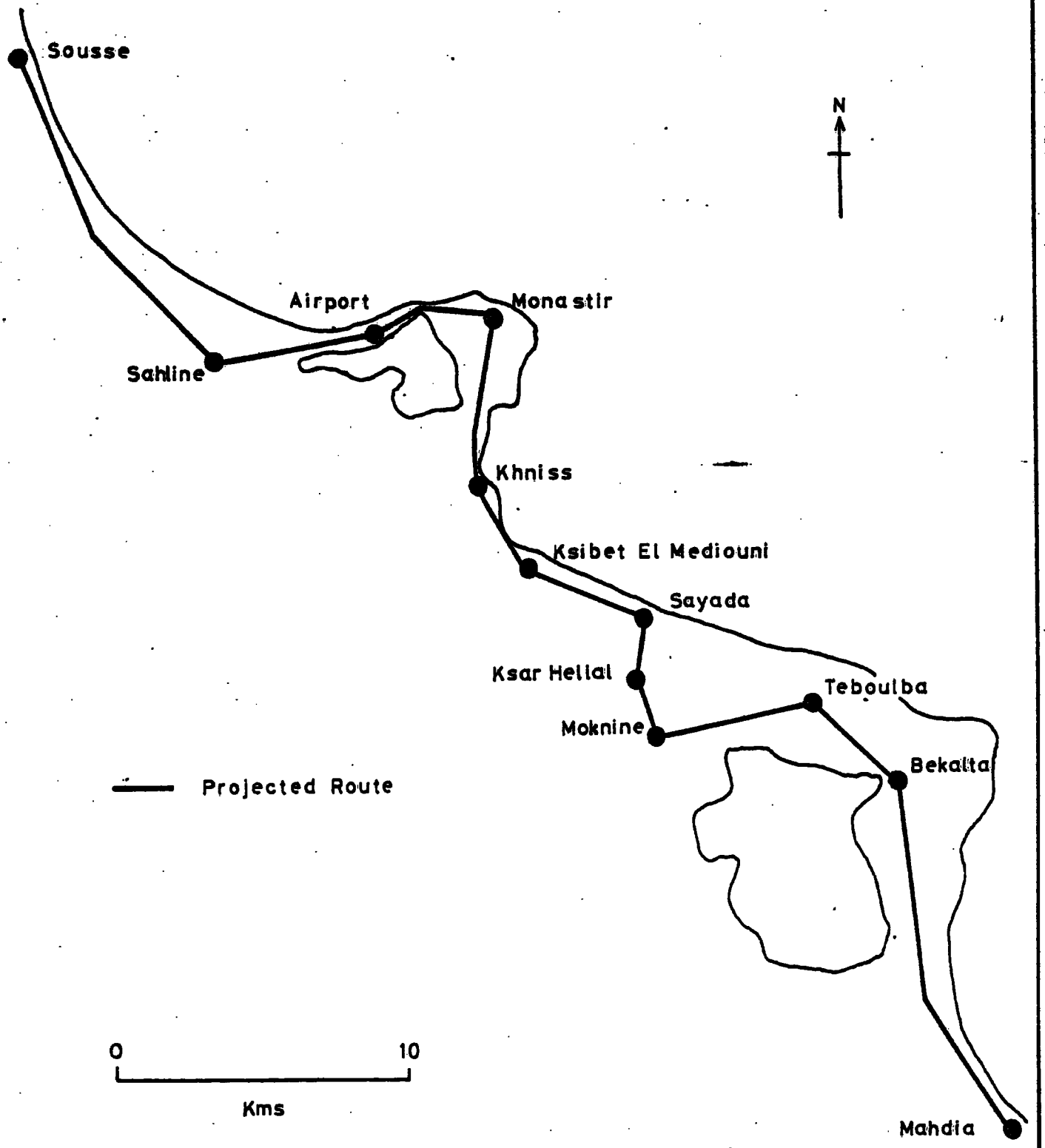


Fig 6.5 BUS NETWORK
MONASTIR GOVERNORATE
Sousse
Monastir
Maatmar
Sahline
M'saken
Kairouan
Sidi Ameur
Khniss
Ouardenine
Mazdour
Menzel Khir
Ksibet El Mediouni
Bembla
Sidi Bou Othman
Lamta
Sayada
Bourdjine
Ksar Hellal
Teboulba
Menzel Kamel
Touza
Djemmal
Moknine
Bekalta
Zeramdine
Beni Hassen
Sidi Naija
Sidi Bennour
Mahdia
Cherahil
Sfax
N
Bus Route
0
10
Kms

Fig 6.6

PROJECTED ROUTE FOR SAHEL METRO



areas may well be modified in order to 'feed' the metro. The PDR has no involvement in this project - it is financed by Austrian and German money and has been planned by the regional economic directorate in consultation with the national Planning Ministry. Its main effect will be to stimulate the axis of development discussed in the following section.

Thus, in terms of transport, the entire area of Monastir governorate is extremely well served. The PDR has co-ordinated and contributed substantially to the finance and construction of a comprehensive network of roads and high quality tracks. Combined with an excellent bus service, accessibility throughout the governorate is not seen as a problem.

6.4.2. Water and Electricity

The provision of drinking water to all households in the region must be seen as a prime objective of development planning yet given the dispersed nature of the rural population, its achievement will take considerable time and expense. Nevertheles SONEDE, working with the PDR, has succeeded in ensuring that all villages in the governorate have fresh drinking water piped to them, and that many households are individually served. Only in few villages, such as Oued Zibs (Ouardenine delegation), is the drinking water supply still restricted solely to public stand-pipes.

Although progressing slowly, the PDR and SONEDE are gradually financing extensions to the water network, such that it is anticipated that, by 1990, all households in the governorate will have access to their own piped drinking water supply. Since 1974, the PDR has spent a total of 443,704TD on extending the water distribution network in Monastir governorate (table 6.23). This money has come from the budget allowance for <u>amélioration des conditions de vie</u>. In addition to the money spent by the PDR, SONEDE also contributes a part of the costs and a final portion has to be made up by the individual subscriber. Proportions contributed by each varies from project to project

Table 6.23 PDR Contribution to the Extension of Drinking Water Supplies Monastir Governorate 1974-1980

Year	Cost (Dinars)	% of improvement of living standards budget	Notes
1974-77	208704	14.5	42.621kms of pipeline plus creation of 4 public water points.
1978	55000	22.4	Extension of pipes at 16 locations - 7815 new subscribers.
1979	87500	23.4	Extension of pipes at 17 locations 491 new subscribers.
1980	92500	27.2	Extension of pipes at 21 locations. (No. of subscribers not specified).

Source: PDR Monastir Unpubl. statistics.

the important points to note, however, are that the drinking water supply network in the region is well established, will soon be complete, and that the PDR has played a significant role in its development.

The same can also be said for rural electrification. A relationship similar to that between SONEDE and the PDR exists between STEG and the PDR; ie. the two groups work together to develop the rural electricity network both in terms of planning and finance. In fact, the electricity network is further established than the water network, and all areas of the governorate will have access to electricity supplies by 1985. The electricity supply to the region is carried by one H.T. lead which feeds an M.T. network of 30kv. Electricity is distributed on a purely commercial basis; no government subsidies are involved. Consequently, prices are high (45 millimes per unit).

As of 1979, the delegations of Monastir and Ksibet El Mediouni were completely electrified, as are all towns and large villages in the governorate. It remains now to connect all the small villages and isolated groups of houses, a task which, as mentioned above, will be completed by 1985.

As with the extension of the water network, extension of the electricity supply to rural areas is financed in part by STEG, partly by the PDR (from the amélioration des conditions de vie budget) and the remainder is paid for by the individual subscriber (table 6.24). In the case of electricity supplies, the contribution of the individual subscriber is restricted to just one Dinar.

Table 6.24 Contribution of PDR to Rural Electrification in Monastir Governorate 1974 - 1980.

Year	Contribution	% of Improvement of Living Standards Budget
1974-77	237140	16.5
1978	37411	15.3
1979	92910	24.9
1980	53620	15.8

Source: PDR Monastir Unpubl. statistics.

6.5 Spatial Component

A balanced spatial system is essential for the success of any rural development programme, particularly one that seeks both to integrate the means to achieve that development and to integrate the rural economy and society with its urban counterpart.

Much discussion has been elicited on exactly how to do this, ranging from straight growth pole theory (Taylor 1975, Lo and Salih 1978) to the agropolitan development expanded by Friedmann and Douglass (1978). However, the optimum lies between the two extremes. It is accepted that the growth pole concept of the 1960s has been shown as having failed to live up to its expectations.....

> 'development poles in most cases become an enclave without pole - periphery linkages, or merely distort the pattern of regional development in an under-developed country and have led to the stagnation of the rural sector through leakages beyond regional and national boundaries'.
>
> (Lo and Salih 1978, p.21)

The failure of the growth pole was largely due to the lack of an adequate spatial structure for promoting and spreading development.

If, however, one turns to Hansen's definition of a growth pole.....

> 'a complex consisting of one or more communities or places which, taken together, provide, or are likely to provide, a range of cultural, social, employment, trade and service functions for itself and its associated rural hinterland'
>
> (Hansen 1972, p.169, cited by Taylor 1975)

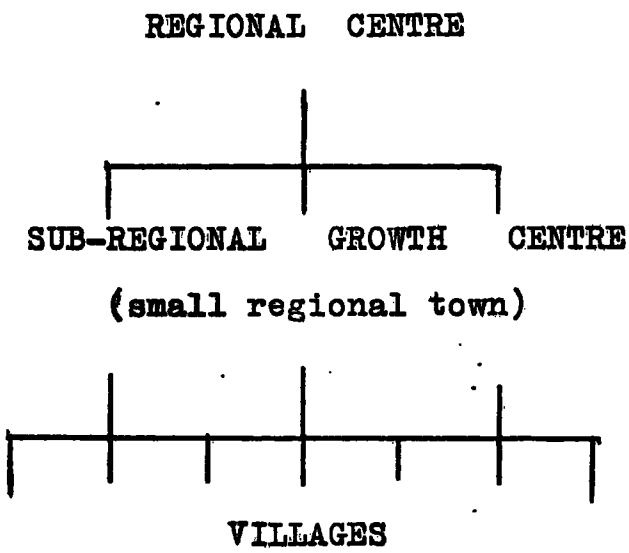
then the basis for a structured rural spatial system can be seen.

It is argued here that a hierarchy of rural settlements, of which the most important component is a small-scale sub-regional growth centre, is the best medium for articulating

an integrated rural development programme. In suggesting this, a compilation of the concepts propounded by Rondinelli and Ruddle (1978) (who argue for a structured series of small rural towns); Weitz (1965, 1979) (who argues for a rural hierarchy of family farms, village and composite rural centre, all of which together form a region centred on a major town) and the Indian experiment with sub-regional growth centres described by Shah (1974), is used.

Thus the spatial structure propounded is founded on a network of villages which are grouped around a series of rural towns, a limited number of which are served by a large regional town (figure 6.7).

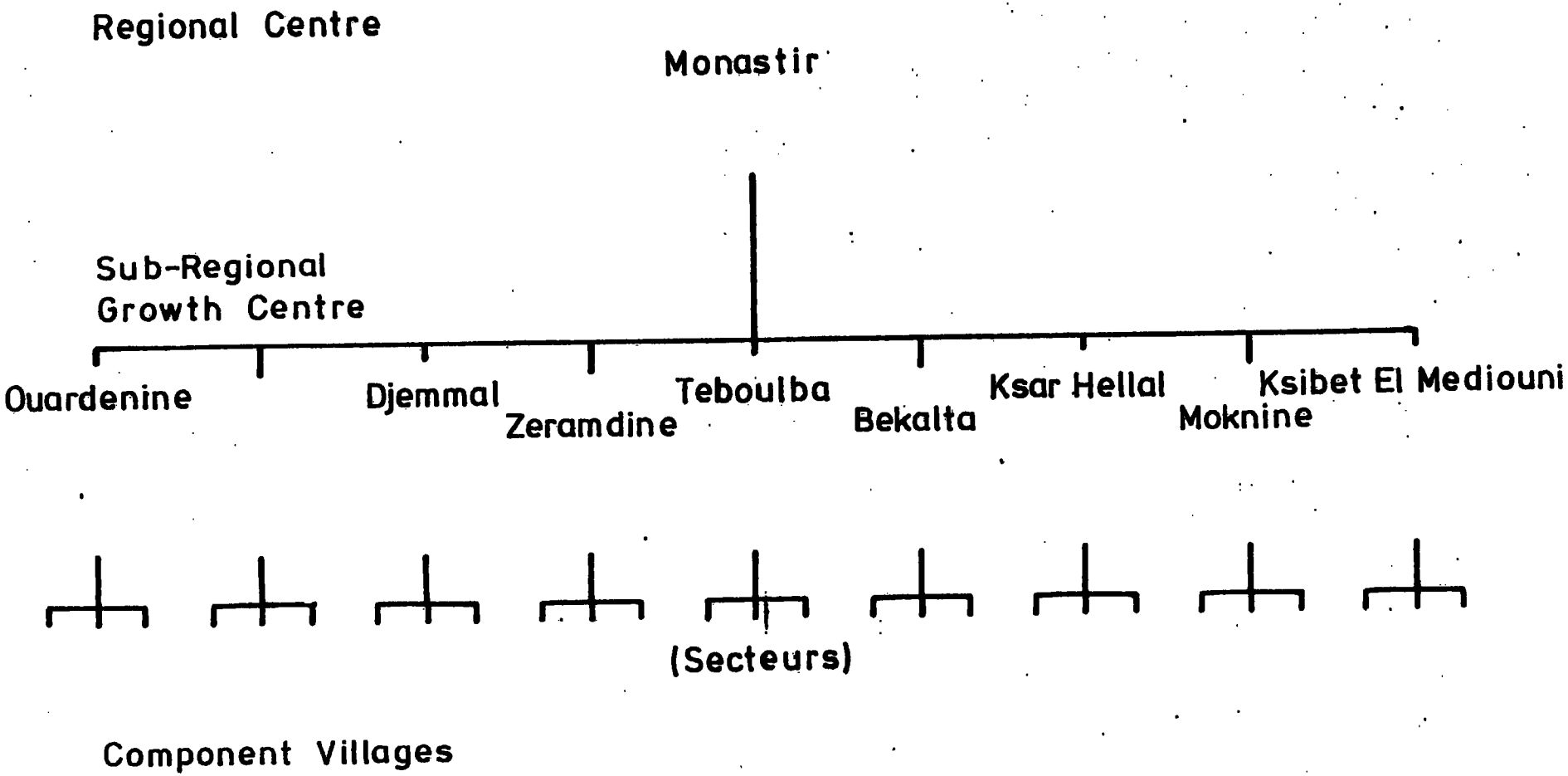
Figure 6.7 Regional Spatial Organisation for IRD



It is the small rural towns which are the key to the system, for these provide a network of decentralised centres that can increase the access of large segments of the population to economic, social and political opportunities, as well as to urban services and facilities. Because of their size, they provide attractive locations for small-scale industrial investment, act as the spatial interface between agriculture

Fig 6.8

SPATIAL STRUCTURE OF MONASTIR GOVERNORATE



and industry and yet, because of their relatively small hinterland (compared to larger urban areas), are easily accessible to the rural population.

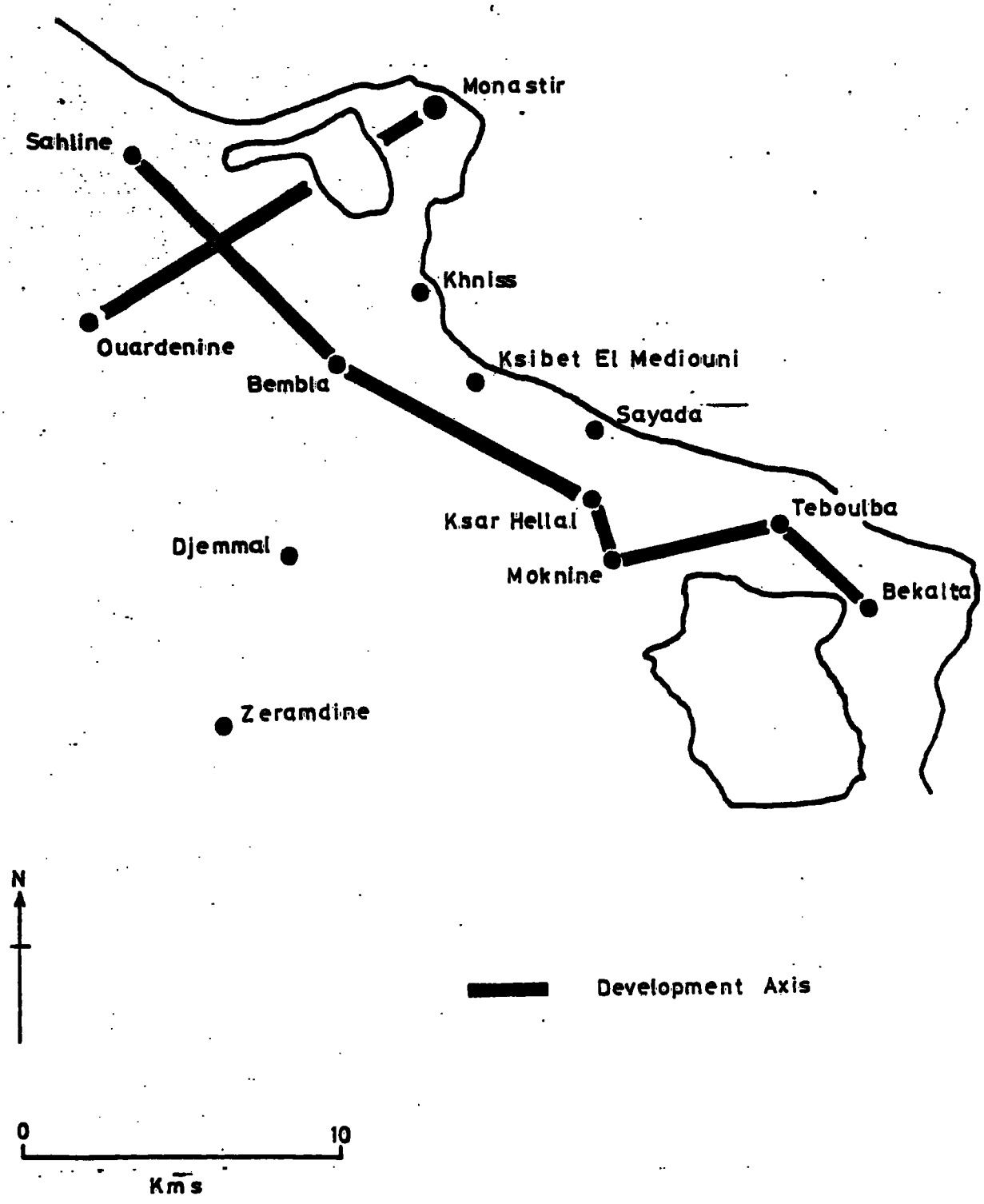
The spatial structure of Tunisia is ideally adapted to such a system. With its hierarchy of secteurs, délégations and gouvernorats, each with its principal settlement, Tunisian spatial organisation is thus highly suitable for the articulation of an IRD strategy. Figure 6.8 illustrates the organisation of this structure within the context of Monastir governorate.

Although the structure exists, its potential for mobilising the development process has not yet been fully realised. As noted above (Chapter Five), there has been a distinct spatial bias of industrial investment in the governorate. Also, the regional development authorities have failed to appreciate the potential gains to be made from encouraging the development of services and employment opportunities, particularly in towns such as Zeramdine, Ouardenine and Teboulba. The one exception to this is Djemmal, where a number of services, rural industries and agricultural support establishments have been developed.

It must however, be noted that in the Governorate Industrial Development report for 1979 (Min. de l'Int/Gvt. de Monastir 1979 b/c) the governorate authorities express a desire to disperse industrial development along two axes in the future: one from Sahline through Bembla to Ksar Hellal, Moknine, Teboulba and Bekalta - and the other from Monastir to Ouardenine. (figure 6.9). How these can be considered development axes, though, is strange. Sahline to Ksar Hellal is a distance of nearly 15kms and just one small village lies between the two - Bembla, with a population of just under 6000. Ksar Hellal to Teboulba already is a very built-up area and, as demonstrated above, already benefits from a vast amount of industrial investment. To suggest this line as a development axis is

Fig 6.9

INDUSTRIAL DEVELOPMENT AXES
MONASTIR GOVERNORATE



therefore meaningless. It is simply an attempt to justify a continuation of an existing, unbalanced development strategy. The same applies to the Monastir - Ouardenine axis. A substantial portion of this route crosses a sebkha - hardly a basis for a development axis. Again, what appears to be proposed is, in fact, simply a justification for continuing the existing spatial imbalance of investment - although if through this Ouardenine becomes the focus for increased investment, then this can only be to the good. It is not development <u>axes</u> that should be considered as investment foccii, but development/ growth <u>centres</u>; individual points that together form a cohesive network.

The role of the principal regional town in this must not be neglected. There are many facilities such as hospitals, large-scale employers, government functions etc. that have to be located in a large central town. The existence of such a centre is thus essential. The important point, though, is that this centre must not be allowed to dominate to the detriment of other population centres in the region. At the moment, the spatial structure of Monastir governorate is over-dominated by Sousse and Monastir. Whilst accepting that it is not practical to remove investments and services from these towns, it is suggested that in the future, greater consideration be given to the location and development of investment and services in the delegation seats of the governorate.

Thus the basic development strategy proposed is one that focuses development efforts on growth with equity by increasing rural productivity, deconcentrating investments and expanding non-agricultural employment, and extending basic social services and facilities in rural areas through a balanced and integrated structure of rural space.

6.6 Conclusion

The rural development programme in Monastir governorate has thus gained considerable momentum since its initiation in 1974. A comprehensive organisation has been instigated, centred on the regional Office de l'Animation Rural. This office provides the foundation for the regional rural development programme which is mobilised with the support of the annual PDR budget allocation (table 6.25). In addition to the works implemented by the rural development office itself, there is obvious close liason between it and other agencies involved in the rural development process.

Table 6.25 Summary of PDR Budget Monastir Governorate 1974 - 1980

	1974-77		1978		1979		1980	
	TD	%	TD	%	TD	%	TD	%
Vocational Training	366847	13.3	88800	12.7	78300	11.2	75200	10.7
Creation and Consolidation of Employment	466502	16.9	240070	34.3	113000	16.1	155558	22.2
Improvement of Living Conditions	1437084	52.1	245261	35.0	373410	53.3	339970	48.6
Public Works Programme	362916	13.2	78860	11.3	86800	12.4	90800	13.0
Wages and Salaries PDR Staff	124000	4.5	47009	6.7	48490	7.0	38472	5.5
Total	2757349	100	700000	100	700000	100	700000	100

Source: PDR Monastir Unpubl. Statistics.

The overall PDR strategy is focused on three action areas: the improvement of rural living standards, the creation and consolidation of employment and vocational training. The PDR budget allocation for each of these since 1974 is summarised in table 6.25. Additional work carried out by other bodies

such as SONEDE and STEG ensure that most of the elements in the five components of the IRD programme discussed in Chapter Two are included. The major criticism of the overall programme, however, is the allocation of priorities to various projects. In several instances described above, an extraordinarily high proportion of investment has been attributed to a number of projects (such as the road network extension programme) which are not justified by their returns. Whilst the overall framework would appear to be satisfactory, there is a need for a reconsideration of the allocation of both priorities and of resources to individual projects. This applies not only to financial, but also to physical and human resources. In particular, one might question the use of water in the region, particularly in the tourist sector.

Nevertheless, in view of the above analysis, it is suggested that the PDR in Monastir governorate has been established along basically the right lines and, given its current structure, offers considerable scope for the successful development of the rural sector in Monastir governorate.

CHAPTER SEVEN

THE IMPACT OF RURAL DEVELOPMENT: FIVE VILLAGES IN MONASTIR GOVERNORATE

7.1 Introduction

Having analysed the Tunisian rural development programme at the regional level, it is now necessary to increase the resolution and to assess its impact at the local, or village level. The preceding chapter studied the programme through the eyes of the development authorities; this chapter reverses the view and assesses the impact of rural development from the Sahelian villager's point of view, with reference to five villages in Ouardenine delegation, Monastir governorate.

Micro-scale studies of the impact of rural development in Tunisia do exist. However, they tend to focus on one particular aspect of the development process. Moreover, few have been written in recent years, and those which have are predominantly in French.

Agriculture, as the dominant activity in the Tunisian rural sector, has inevitably been comprehensively covered, with several studies on agricultural change and its effect on rural society (Boukraa 1976, Sethom 1978). Other writers have focused on more specific aspects, often linking their study with a single village rather than an area. Abu Zahra (1972) examines change in social status in a Sahelian village; Nassif (1978) marriage patterns and social change in Thrayet, (Sousse governorate); Brown (1981) family planning in Ksibet El Mediouni (Monastir governorate) and Moore (1963) political change in Hammam Sousse. These represent just a few papers relating to the Sahel, but many others could be added to the

list relating to other parts of the country and to other subjects (Hopkins 1977, 1979, Tessler and Hawkins 1979, Trabelsi 1976, 1979, Mtar 1977, Kassab 1977, for example). Few studies, however, have attempted to combine several elements for one village or group of villages and to assess the overall impact of development(1). A significant gap therefore exists in the study of Tunisian rural development which this and the following Chapter seek, in part, to fill.

In order to place the villages upon which the analysis in this Chapter is based in their proper context, brief detail will be presented on the main characteristics of each. This is followed by an analysis of the employment structure, including an examination of un - and under - employment and the role of female labour in rural society. The role of social mobility, long important in the Sahel, is then studied within the context of the present rural development programme.

A major stimulus to development has been the increase in the local money supply which has resulted from both investment and income increases. Investment in the rural sector is examined in the previous Chapter; this Chapter focuses on the effects of changing income levels and the proportion of new incomes which have been generated and remain in the rural economy. How this is reflected in the local spatial economy is then examined.

With regard to qualitative changes, village and household environments within the five settlements are analysed. This is followed by a brief examination of changes in village

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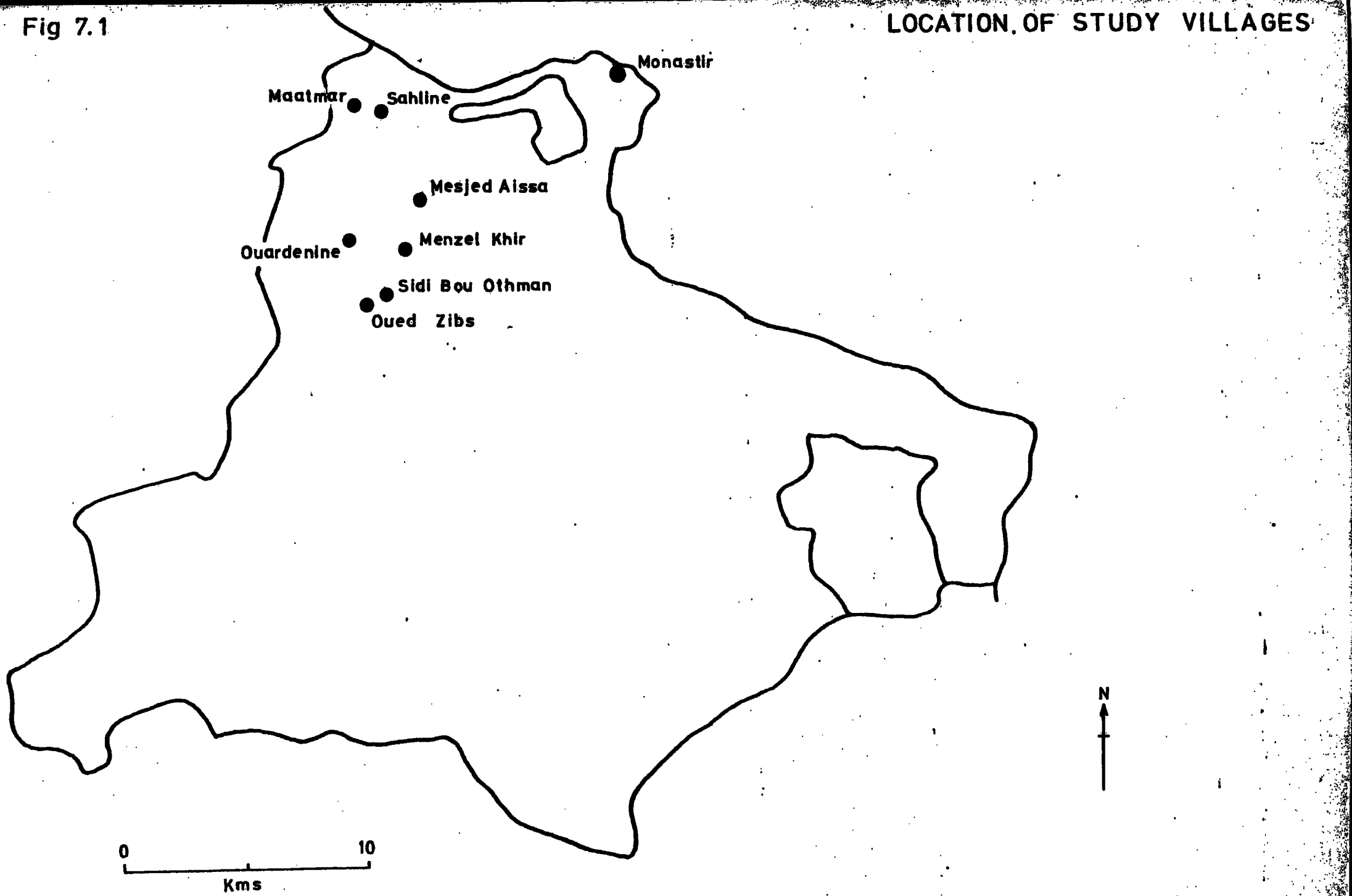
(1) A major exception to this is Duvignaud's 'Change at Shebika', but change in this instance was as much a result of the presence of sociologists as it was of national policy (Duvignaud 1968).

Fig 7.1


LOCATION OF STUDY VILLAGES
Monastir
Maatmar
Sahline
Mesjed Aissa
Ouardenine
Menzel Khir
Sidi Bou Othman
Oued Zibs
N
0
10
Kms

social structure and the role of the family. Finally, and by way of conclusion, responses to questions put to members of th five communities on their perception of change and development in their village are presented.

7.2 Data Base

The data upon which the following discussion is founded are derived from a questionnaire survey undertaken in the five villages of Maatmar, Mesjed Aissa, Menzel Khir , Sidi Bou Othman and Oued Zibs, all of which fall within Ouardenine delegation (figure 7.1). A total of 200 people were interviewed, 50 from each of Maatmar, Mesjed Aissa and Menzel Khir, plus 30 from Sidi Bou Othman and 20 from Oued Zibs (see Appendix I for Questionnaire).

The survey was undertaken in Arabic, using an interpreter to translate responses into English. The author was present at all interviews which, where possible, were held in private. Selection of respondents was not random as the survey attempted to reach as wide a range of social, economic and age groups as possible (table 7.1).

Whilst it is recognised that from a methodological point of view, the techniques used in the survey may not be perfect, it is felt that, in the light of the given conditions, the survey represented the best possible means of eliciting a reasonably accurate picture of the attitudes and views toward the progress of rural development from as wide a cross-section of residents as possible. The greatest restricting factor was undoubtedly the author's lack of Arabic, and it was due to this reason that interviews were conducted through just one interpreter, always in the author's presence, in an attempt to minimise any potential error or bias in translation.

Table 7.1 Distribution of Survey Respondents by Age, Sex and Village

Village	20	20-29	30-39	40-49	50-59	60-69	70	Total	No. of females
Maatmar	3	19	6	9	6	4	3	50	15
Mesjed Aissa	4	9	13	7	8	7	2	50	10
Menzel Khir	6	15	7	7	7	5	3	50	8
Sidi Bou Othman	3	8	5	4	4	4	2	30	-
Oued Zibs	1	5	3	3	5	3	-	20	3
Total	17	56	34	30	30	23	10	200	36

Additional information in support of the questionnaire is provided from official documentation and field observation.

7.3 The Study Area

Maatmar is a part of the commune of Sahline - Sidi Ameur - Maatmar. It lies to the west of Sahline on the fringe of gently undulating land which stretches for several kilometres to the west and is covered predominantly by olive trees. To the east, however, lies the coast and the Dkhila strip which forms part of the extensive Monastir/Skanès hotel development. Despite forming a part of a municipality, Maatmar is very much an agriculturally-based society, the majority of its population still being involved in agriculture or associated activities although as described below, there has been an increase in recent years in the dormitory functions of the village in relation to Sousse and Monastir.

To the south of Maatmar, on the crest of a ridge, lies Mesjed Aissa. The village is close to a new highway linking Monastir and Ouardenine and is just 0.5kms away from its intersection with the main Sousse - Mahdia road. Mesjed Aissa is considerably more affluent than Maatmar and the relative importance of agriculture to the local economy is declining. Two small textile factories have been established here, and considerable investment in the general village fabric has been undertaken. Nevertheless, the fields immediately surrounding the village have recently been developed with the introduction of new fruit tree plantations and a small number of irrigated plots. Beyond this land, the cultivated area again becomes dominated by the olive tree.

The remaining three villages are more remote than either Maatmar or Mesjed Aissa. Menzel Khir, the largest of the three, is the village which offers the greatest contrast

of the five. At its northern end a number of new villas are appearing which contrast strongly with the derelict and half-derelict houses of the southern extremity. Despite the presence of a carpet factory employing 50 people, Menzel Khir relies heavily on agriculture. Agricultural improvements in the vicinity of the village have, however, been limited; there is little evidence of new fruit tree plantations or development of market gardening such as is found in other villages of the area, and the olive continues to dominate.

Sidi Bou Othman and Oued Zibs, although separate settlements, are linked administratively, sharing the same omda. Of the five villages, Oued Zibs is undoubtedly the poorest and is also the smallest. It is extremely remote and accessible only along rough tracks. There is but one public water standpipe and no other public utilities. The quality of housing is very poor and all families depend on low-grade agriculture (dominated by olives) for their income. Sidi Bou Othman is little better, although water and electricity are both supplied to the village. There are indications here, however, of increasing prosperity, with a new shop and several new houses being constructed. Yet within Sidi Bou Othman some of the poorest housing seen in Monastir governorate is to be found; a collection of mud and straw huts, reinforced with tin cans and rubber tyres surrounded by brushwood fences forms a small community within the confines of the village.

In summary, all five villages share an agricultural base to their economy, but the dependence on this has been reduced by varying degrees in each settlement. Each village represents a different aspect of rural life in the Sahel. Maatmar is a semi-urbanised settlement, the closest of the five to urban areas, and it illustrates the problems of a traditional rural settlement having to adapt rapidly to an increasingly urban-oriented society. Mesjed Aissa is the most affluent of the five

with the soundest and most diversified economic base. The remaining villages decline in quality from Menzel Khir through Sidi Bou Othman to the poverty of Oued Zibs.

An indication of the relative size of each of the five villages is presented in table 7.2.

Table 7.2 Size of Study Villages

	No. of Houses (1)	Estimated No. of Inhabitants (2)
Maatmar	238	1309
Mesjed Aissa	192	1056
Menzel Khir	125	688
Sidi Bou Othman	64	352
Oued Zibs	45	243

(1) Field Count Autumn 1979

(2) No. of houses x 5.5 (mean h/h size 1975 census).

7.4 Employment Structure

Because of the limited size of the questionnaire sample, definite conclusions on the overall employment pattern in each of the villages cannot be made. However, relationships between variables relating to occupation that were covered in the questionnaire reveal some interesting phenomena.

The occupations of respondents are presented in tables 7.3(i) and 7.3(ii); 7.3(i) being occupation by activity and 7.3(ii) occupation by profession. Classifications used equate with the Tunisian system of employment classification utilised in the national census.

From the tables it is clear that a wide range of economic activities and professions were sampled, although the greatest

Table 7.3 (i) Classification of Respondents by Economic Activity

	Maatmar	Mesjed Aissa	Menzel Khir	Sidi Bou Othman	Oued Zibs	Total
Housewife	11	10	6	-	3	30
Student	1	-	5	1	-	7
Unemployed	2	-	-	1	3	6
Retired	4	6	1	2	-	13
Agric., Forest, Fish. Unspecified	4	2	1	-	-	7
Crop Production	1	6	5	-	-	12
Livestock Farming	1	-	-	-	-	1
Arboriculture	-	-	6	9	5	20
Mixed Farming	-	-	-	4	-	4
Extractive Industries	1	-	-	-	-	1
Textile Industries	1	-	4	-	-	5
Wood and Cork (excl. Furniture)	-	1	-	-	-	1
Furniture	-	1	-	-	-	1
Printing, Publishing, Paper	-	-	1	-	-	1
Other Manufacturing	1	2	-	1	-	4
Electricity, Gas Water	1	1	-	2	-	4
Construction	3	7	6	2	-	18
Transport and Communications	3	3	1	2	-	8
Commerce and Banks	4	4	3	1	3	15
Service (incl. Tourism)	6	2	5	3	2	18
No response	6	1	6	3	4	24
Total	50	50	50	30	20	200

Table 7.3 (ii) Classification of Respondents by Profession.

	Maatmar	Mesjed Aissa	Menzel Khir	Sidi Bou Othman	Oued Zibs	Total
Housewife	11	10	6	-	3	30
Student	1	-	5	1	-	7
Unemployed	2	-	-	1	3	6
Retired	4	6	1	2	-	13
Scientific	1	-	1	1	-	1
Civil Service and Teaching	4	2	4	4	1	15
Administration	3	1	1	-	-	5
Commercial	4	4	3	1	3	15
Specialist in Services	3	1	4	1	2	11
Dir.Agric. Enterprises	1	-	-	-	-	1
Agric. Exploitants	3	6	10	7	4	30
Agric. Labourer	-	1	2	6	1	10
Skilled Labourer	1	4	4	-	-	9
Skilled Tradesman	6	7	1	2	-	16
Non-Skilled - non-Agric.	6	7	8	4	3	28
Missing	-	1	-	-	-	1
Total	50	50	50	30	20	200

proportion (22%) were inevitably involved in agriculture. The very fact that a large number of economic activities are represented in the employment structure of the villages is significant. Employment opportunities within these various activities do not exist at village level. It is therefore evident that a substantial proportion of the population work outside the village of residence. This view is supported by an analysis of responses to questions put on the location of employment (table 7.4). Although the majority of workers in each village work in their own village (with the exception of Maatmar), many commute, particularly to Sousse and Monastir; Skanès, the area in which most of the Monastir hotels are located, also attracts a significant number of employees (Jedidi 1979).

Table 7.4 Job Location of Employed Respondents

	Village of Residence					
Job Location	Maatmar	Mesjed Aissa	Menzel Khir	Sidi Bou Othman	Oued Zibs	Total
Tunis Governorate	-	1	-	-	-	1
Monastir	1	1	2	2	2	8
Skanès	2	2	3	1	-	10
Ouardenine	1	-	-	1	-	2
Sahline	3	1	-	-	-	4
Maatmar	9	-	-	-	-	9
Sidi Ameur	1	-	-	-	-	1
Mesjed Aissa	-	17	1	-	-	18
Menzel Khir	-	-	24	-	-	24
Sidi Bou Othman	-	-	-	17	2	19
Oued Zibs	-	-	-	-	8	8
Sousse	12	8	6	3	-	29
Other	1	1	1	1	1	5

Those remaining to work in their own village tend to be employed in the agricultural sector, with a small proportion employed in the tertiary and construction sectors; whereas those working in Sousse, Monastir and Skanès are concentrated in the

tertiary sector (table 7.5). Although it would be expected that a certain proportion of inhabitants of the five villages would commute to the nearest large towns for employment, a surprisingly high proportion do appear to undertake this practice.

Table 7.5 Job Location of Employed Respondents by Economic Activity

Category of Economic Activity of Respondent	Job Location									
	Sousse	Monastir	Skanès	Maatmar	Mesjed Aissa	Menzel Khir	Sidi Bou Othman	Oued Zibs	Rest of Monastir Gvt.	Others
Agriculture	2	-	-	4	7	12	13	5	1	-
Extractive Industry	-	-	-	-	-	-	-	-	1	-
Manufacturing Industry	5	2	-	-	-	2	-	-	2	1
Tertiary Sector	11	3	10	3	4	3	3	3	2	2
Construction	3	1	-	1	4	5	-	-	-	1
Other	8	2	-	1	3	2	3	-	1	2
Total	29	8	10	9	18	24	19	8	7	6

Two factors contribute to an explanation of this phenomenon. Firstly, it is apparent that there is a feeling amongst an increasing number of people that, although it is preferable to exploit the benefits and opportunities of urban employment, urban areas as places to live are no longer as attractive as they at one time were. Secondly, it is evident that many people who left the villages of the Sahel in order to take up posts in the civil administration vacated by the French officials, are now returning to their place of origin, yet retaining posts in the administration at the regional level. Within the five villages studied there is, therefore, a noticeable development of a commuting mentality.

In support of this statement, a number of pieces of corroborating evidence may be cited. In addition to questions relating to their own employment, respondents were questioned on the characteristics of other workers within their households. Analysis of their responses again reveals a large proportion of workers who are employed in Sousse, Monastir and Skanès (table 7.6). Secondly, many respondents, in reply to questions on their perception of village life (see below for a detailed analysis of responses to these questions), expressed a preference for the village as a place to live because of its calm, peacefulness and tranquility; not for them was the hectic pace of urban life, although recognition was given to the greater employment opportunities offered by towns. Not as significant, yet a supportive factor to the argument, is the fact that to many people of Sousse and Monastir, villages in the Ouardenine/Sahline area, particular Maatmar and Mesjed Aissa, were known as the banlieu, thus recognising their commuter character.

Table 7.6 Location of Employment of Additional Income Earners

Sousse	39
Monastir	10
Skanès	16
Maatmar	7
Mesjed Aissa	15
Menzel Khir	12
Sidi Bou Othman	9
Oued Zibs	6
Rest of Monastir Gvt.	14
Other	6

Such conclusions reinforce arguments propounded by others who suggest that, in the period 1960 - 1980, the Sahel has been transformed from an area of out-migration to one of in-migration, and that intra-regional movements have increased (Attia 1970,

Bchir 1971, Findlay 1980). Traditionally, villages were places in which the older people tended to take a very introspective view and live very traditional lifestyles whilst the younger generations, in order to break from this, had to move to the towns. Now, the villages have become places in which to live in preference to the towns which have continued to provide the best employment opportunities. Commuting has thus evolved.

With reference to the sectoral breakdown of employment, it has already been noted that those working in the villages tend to be employed in agriculture and unskilled labouring jobs, whilst those commuting to the towns are employed in more skilled professions, particularly administration, management of services and skilled tradesmen in urban industries. (The exception to this are those people working in the Skanès hotels who tend to be employed in the unskilled cleaning and portering jobs). Two factors can be seen to influence this phenomenon: age and education.

Figure 7.2(i) illustrates the age structure of employment in each sector of economic activity amongst those interviewed. Although based on a sample of only 200, a number of points are suggested. Firstly, those working in agriculture tend to be in the older age groups. A similar phenomenon has been noted in the rural areas of Zaghouan governorate (Mtar 1977). This reflects the fact that many young people, particularly having had the benefit of education, feel restricted by the traditional agricultural employment of the area and search elsewhere for work. An effect of this has been to create a labour shortage in agriculture, particularly at peak demand periods such as the olive harvesting season. Despite a dissatisfaction with agriculture, young people at present have been disinclined to leave the village permanently in order to seek work. Instead,

Fig 7.2.(i)

DISTRIBUTION OF RESPONDENTS BY AGE GROUP AND SECTOR OF ECONOMIC ACTIVITY

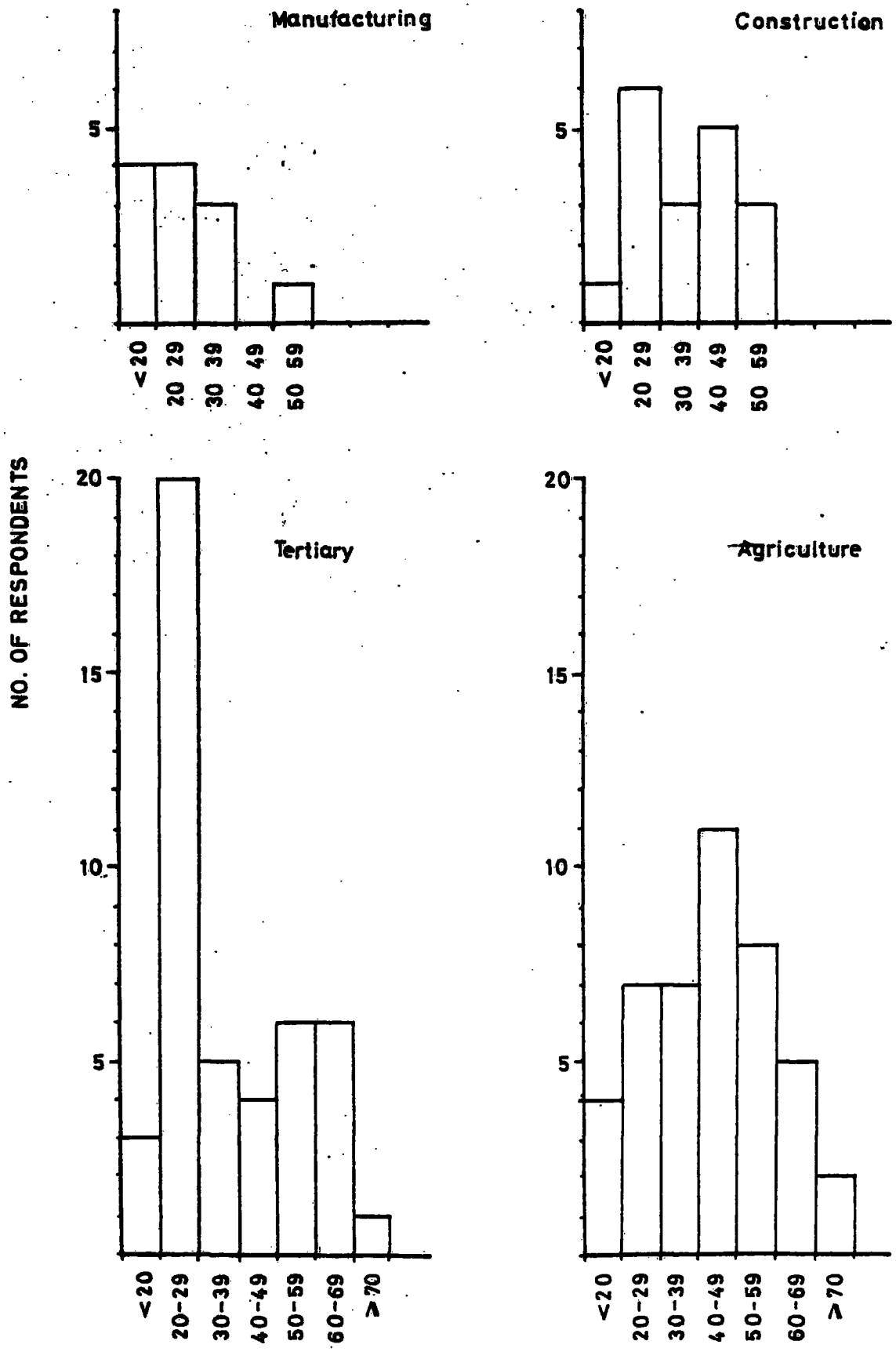
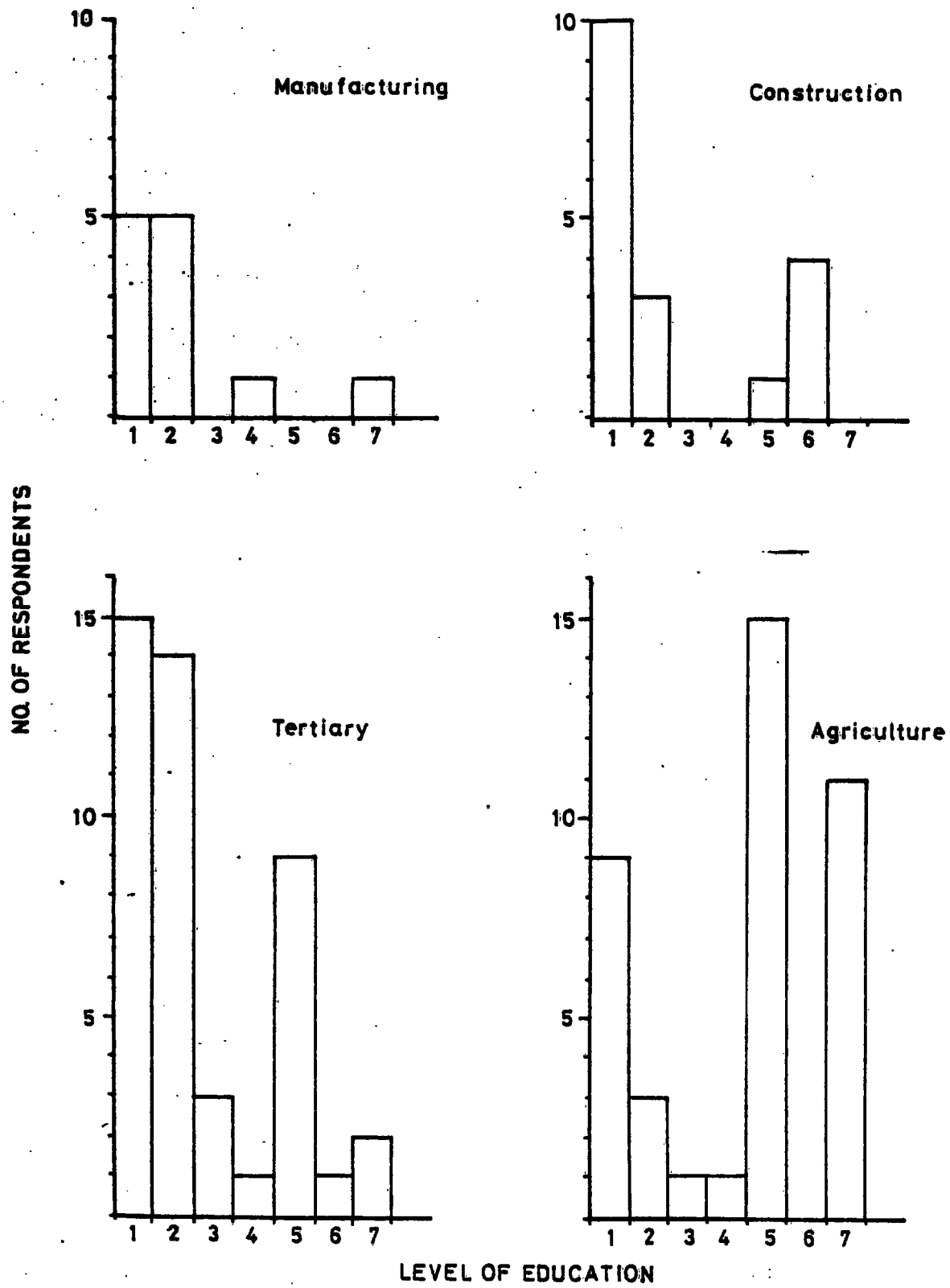


Fig 7.2.(ii)

DISTRIBUTION OF RESPONDENTS BY LEVEL OF EDUCATION AND SECTOR OF ECONOMIC ACTIVITY



particularly those from Maatmar, Mesjed Aissa and Menzel Khir, have been seeking work in the hotels of Skanès or else employment in the tertiary sector or industrial plants of Sousse.

The influence of education on this particular trend is also noticeable in figure 7.2(ii). The results of the questionnaire imply that a higher/better educational background is encouraging people to work outside agriculture. This is not necessarily due to the fact that education itself gives workers access to a wider range of jobs - high levels of education are hardly necessary for hotel work - but that it widens horizons and stimulates the search for life beyond that of traditional agriculture.

7.4.1 Under - and Unemployment

Detail relating to unemployment at village level has been difficult to obtain; just six unemployed persons were interviewed, obviously an inadequate number from which any conclusions may be drawn. However, from general observations in the field a number of inferences may be made.

Unemployment at the village level is pronounced, but variable between age groups and economic sectors. Given that many landowners complained of labour shortage for agriculture, it is apparent that unemployment is low in this sector. But it does appear that there are people without work who are unwilling to work in the fields and are relying on their families to support them. This applies in particular to young males aged 15 to 25; people of this age group appeared to be particularly choosy as to what work they would undertake. Men in the 25 - 40 age group also experienced unemployment, but for different reasons. Although most had at least primary education, few had had opportunities for further vocational training. Naturally many have since acquired skills, but their abilities

were not flexible enough to meet a labour market in which supply far exceeds demand. In some ways, therefore, it was the older generation of men who were best equipped to meet the employment situation. These men had none of the prejudices against agricultural employment and were thus able to take advantage of the demand for agricultural labour.

Information on under-employment, on the other hand was easier to obtain from questioning respondents on hours and days worked in an average week. An analysis of these figures reveals that, for those interviewed and in employment, under-employment is not a serious problem.

Table 7.7 Mean Time Spent at Work

Average hours worked per day		Average number of days worked per week	
Hours	Frequency	Days	Frequency
2	1		
4	6	5	12
5	4	6	56
6	8	7	27
7	8	Variable	46
8	44		
9	4		
10	10		
11	3		
12	5		
Variable	48		

The above table illustrates that the majority of people interviewed work between 6 and 9 hours a day and 6 days a week. A significant proportion, however, do work a variable number of hours and days. The impression gained from the interviews though was not that these people were under-employed, simply that they worked in sectors such as construction and transport which required a high but varied number of working hours per week.

A second reason for suggesting that under-employment is not a serious problem in the region relates to the land ownership structure. Of the 200 people interviewed, 153 (76.5%) were part of families who owned some agricultural land that was farmed in order to provide a supplement to the income for regular employment. Only 66 of these farmed their land as a full-time occupation. The Sahel has always been an area of small-scale sedentary farming - indeed this is the major reason accounting for the lack of colonial penetration in the area (Despois 1955). This foundation has remained; but what has apparently occured is that landowners have found land holdings uneconomical to live off, but have retained the holdings in order to provide supplementary income to that which they could obtain from more permanent jobs elsewhere. Although this will be discussed in greater depth in the following chapter, farming as a secondary activity is one of the major reasons accounting for the decline in standards of agricultural management, particularly in the olive areas of the Sahel.

Mean size of the holdings is small, (5.5ha); all but 14 people grew olives, and only 3 of the 153 did not use their land. There was little diversity amongst crops grown on these plots - 60 people grew other fruit trees to supplement olives, 7 produced some form of culture maraîchère, 18 a little wheat and one person only grew fodder crops. Little variation in these trends occured between any of the five villages.

These landholdings are not, therefore, of major significance to households, but they do serve as useful supplements to domestic budgets and provide some measure of security. As most are devoted to olives, little work is needed to maintain them, yet sufficient is required to 'fill in' any time available for economic activity within households. It is in fact significant that when asked if respondents had second

jobs, 60 (30%) replied 'yes' and 55 of these described the job as being associated with farming. The remaining five jobs were described as:carpet making (2), wool spinning, odd-job man and seller. Secondary economic activity is therefore an important part of the employment structure in the area studied.

7.4.2 Female Employment

The changing role of women in Tunisian rural society is an important aspect of recent development in the country. The Code of Personal Status 1956, and the introduction of a national family planning programme in 1966 have helped to make Tunisian women amongst the most liberated in the Arab world. Inevitably, these national developments have had an impact at the village level. Although most of the changes in the position of women and in family structures have resulted from the processes of modernisation, industrialisation and urbanisation, rather than from the fact of women working (Hawker 1976), noticeable changes have occured in female employment patterns. Unfortunately, because of the limited number of interviews conducted with women, no inferences may be drawn directly from the questionnaires with regard to female employment. However, from other observations, the following points may be made.

There is a long tradition in the study area of women working at home and weaving on their own looms. This practice has not changed; many women still continue to produce textiles in their own home. The emancipation of women has meant, however, that an increasing number of women are now going out to work in factories and other public places. The tourist boom in the Sousse - Monastir region has stimulated a huge demand for women cleaners and kitchen staff. According to Jedidi, approximately one quarter of hotel employment in the Sousse/Skanès/Monastir zone is female (the highest proportion for any tourist zone in Tunisia). (Jedidi 1979).

Attempts by the PDR and the API to attract foreign export industries to Tunisia has, as discussed earlier, been a partial success. However, in the Sahel region, the main form of industry attracted has been textile. Because of the nature of the work involved, the labour requirements for these factories have been almost totally female-oriented. In Sahline, a Usine de Confection has been established under the 1972 Law. It employs 70 people, 67 of whom are female. Two similar factories have been opened in Ouardenine, again both textile (clothing manufacture) factories, both established under the 1972 Law. One factory employs 232 Tunisian people, all of whom are women; the other 158, of which 154 are women. These three plants represent the sum total of export industry development in Ouardenine delegation up to December 1979. Whilst it is a positive gain that increasing employment opportunities are being made available to women, a number of criticisms need to be noted. Firstly, on the whole, it is only the young women, between the ages of 15 and 25, who are taking advantage of the new job opportunities. Older women are finding it difficult to overcome their own and their family's conservatism (Abu Zahra 1972).

Secondly, although the women are working, there has still really been little attitude change. It has been noted that the young female workers tend to leave work in their early twenties (Hawker 1976); that women go out to supplement family income, but have very little control over their earnings, which tend to be handed straight to the husband who returns a small amount for the wife's allowance. Hawker suggests that women have still a long way to go before they begin to realise the power of the economic weapon they now hold, or its potential in providing them with greater independence. Even amongst single women it is found that they have not realised the full potential of their economic freedom. Instead, they are often going out

to work solely to raise money in order to improve their dowry. Considerable advances have been made with regard to the economic emancipation of women in rural Tunisia but considerable ground has still to be covered before attitudes allow the full realisation of the independence provided for them in Tunisian law.

Indicative of the slow changing of attitudes towards female employment in rural areas are the responses to questions asking unemployed women if they would work should a job be offered to them. Of the 35 women interviewed, 4 already had jobs (and all these were less than 25 years old). Of the remaining 31, 22 replied that, even if they should be offered a job, they would be unlikely or unwilling to take it. It is also revealing that all of the 9 who said that they would take a job were between 20 and 30.

7.5. Social Mobility

Social mobility through employment was completely absent amongst the women, but there was a notable desire amongst working men to improve their job and thus their social status. That opportunities for social mobility have greatly increased since independence has been clearly demonstrated elsewhere (Allman 1979). The exodus of the French administrative classes and the expansion of the Tunisian economy in the 1960s have both provided major stimulants to social mobility. Not all social mobility has been initiated through new employment opportunities; changes in the general social and political environment brought about by legislation such as the Code of Personal Status, or the influence of the Parti Socialiste Destourien (PSD), have brought about changes in the structure of Tunisian villages, however, employment remains a key factor in this aspect of change.

During the questionnaire, respondents were asked if they would like to change from the job they were at present employed on; 73 (36.5%) said yes, 69 (34.5%) said no and the question was either not answered or inapplicable to the remaining 29% (table 7.8).

Table 7.8 Number of Respondents Wishing to Change From Present Occupation.

	Village of Residence					
	Maatmar	Mesjed Aissa	Menzel Khir	Sidi Bou Othman	Oued Zibs	Total
Yes	12	10	26	13	12	73
No	18	23	12	13	3	69
Not answered	20	17	12	4	5	58

Respondents were then asked the reasons for their response. The range of answers was not great (table 7.9).

Table 7.9 Reasons for Wishing to Change Occupation

Reasons	Village of Residence					
	Maatmar	Mesjed Aissa	Menzel Khir	Sidi Bou Othman	Oued Zibs	Total
To get a better job	7	10	12	5	5	40
To get more money	5	2	10	7	5	29
To get a more permanent job	1	-	1	2	1	5
Bored with present job	-	1	4	-	-	5
To improve training	-	-	1	-	-	1

To get more money is a predictable response, but when coupled with the large proportion of people who suggested that they wanted a better job, it is questioned whether money is the sole motive. Although financial reasons are obviously

significant, it is suggested that a chance to improve status and position is also implicit in their replies.

Surprisingly, it was found that age, marital status and education had no bearing at all on a respondent's desire to change occupations. This is indicated in tables 7.10, 7.11 and 7.12, where it will be noted that respondents in both categories with relation to a desire to change jobs are spread evenly amongst the various age, education and marital status categories.

Table 7.10 Distribution of Respondents by Age, and Desire to Change Occupation

Change Occupation	Age Group						
	<20	20-29	30-39	40-49	50-59	60-69	>70
Yes	4	21	10	15	15	7	1
No	6	21	13	9	7	8	5

Table 7.11 Distribution of Respondents by Marital Status and Desire to Change Occupation

Change Occupation	Married	Single
Yes	48	25
No	44	25

Table 7.12 Distribution of Respondents by Schooling and Desire to Change Occupation

i)

Change Occupation	Received Education	
	Yes	No
Yes	55	17
No	67	2

ii)

Change Occupation	Level of Education				
	Primary	Secondary	University	Koranic	Other
Yes	24	14	1	13	2
No	20	21	5	17	4

The only two factors which did appear to be correlated to a desire to change occupation were village of residence and category of present occupation. Lower skilled workers tended to be more keen to change jobs than did those of higher ability, particularly in the agricultural sector. This is reflected in the sectoral breakdown of respondents in table 7.13.

Table 7.13 Distribution of Respondents by Category of Present Occupation and Desire to Change Occupation

Present Occupation	Change Occupation	
	Yes	No
Agriculture	35	20
Extractive Industry	1	-
Manufacturing Industry	4	6
Tertiary Sector	19	25
Construction	10	4

With reference to the village of residence (table 7.9), it is noticeable that proportions of respondents indicating a desire to change occupation were greatest in the villages of Menzel Khir (52%), Oued Zibs (60%) and Sidi Bou Othman (43%) - ie the three most rural and remote villages. It is suggested that this is indicative of the stronger dominance of agricultural employment in these villages and reflects the greater desire noted above of people in less-skilled occupations to improve their status.

Attention up to this point has been focused on those who expressed a wish to change occupations. It is also significant that 48.6% of the respondents stated that they had no desire to undertake such a change. Some of the reasons accounting for this proportion have been implicit in the above discussion; whilst a number of respondents have been seeking to improve their social position, others are satisfied with the position

already achieved (table 7.14). Almost 50% of the negative responses were given essentially because the respondent was happy and settled in his job, or was trained for it and therefore wished to remain there. Of interest, however, is the 33% of respondents who indicated a lack of desire to change because they were too settled in their present environment. Such an element of conservatism is perhaps inevitable within a rural community, but it also reflects the increasing appeal of the Sahelian villages as a place in which to live.

Table 7.14 Reasons For Not Wishing to Change Occupation

Reason	Village					
	Maatmar	Mesjed Aissa	Menzel Khir	Sidi Bou Othman	Oued Zibs	Total
Settled and like present job	4	1	3	4	1	13
Trained for the job	9	4	5	3	-	30
New investment made in present occupation	2	3	-	3	-	8
No better jobs available	1	2	-	1	-	4
Not educated enough	1	1	-	-	1	3
Too old	5	6	6	3	1	21
Attached to the village	1	1	-	-	-	2
Family ties	2	4	2	-	1	9

7.6 Migration

The preceding discussion focuses on the recent past and the present with regard to occupational, social and spatial mobility. The major conclusion is that the villages studied have become attractive places in their own right for people to live in, and that, although villagers continue to wish to take advantage of urban employment, they are not prepared to live in

the towns whilst working there. This has not always been the case.

As would be expected, there are three main destination zones for the permanent migrants from the five villages investigated, Sousse, Monastir and Tunis (table 7.15).

Table 7.15 Migrant Destinations From the 5 Villages

	%
Sousse	31.8
Tunis	24.8
Monastir	8.5
Elsewhere in Tunisia	18.6
Abroad	16.3
	100

A significant proportion (16.3%) have also migrated abroad.

The kind of reasons given for migrants leaving the villages were also much as one would expect in the light of previous studies of the subject:

To seek employment	45%
Job training necessitated a move	36%
To improve on present job	1.6%
To be with family/ marriage	14%
To get away from the village	2.4%
Others	1.1%
	100%

The high proportion (36%) who had to move for professiona

reasons reflects the large proportion of people in the Sahel entering professions such as the civil service, teaching and general administration etc. The low percentage who migrated simply because they did not like village life (2.4%) is particularly interesting, bearing in mind earlier comments relating to aspirations for social mobility. This figure suggests that occupational and spatial mobility has been seen for a while as a means for achieving social mobility. Permanent migration in the past was apparently thus more a result of 'pull' factors than 'push' ones.

The final point of note with regard to permanent migrants is that only 24% sent money back to their families in the villages. The general impression gained was that, once a migrant had left the village and established him/herself elsewhere there was a virtual complete economic break from the area of origin. Respondents frequently registered surprise that remittances of any kind should even be considered; the attitude seemed to be that, once the person had left, it was his/her life and up to them to get on with it. This did not mean, however, that migrants completely broke all contact with their village of origin. All but 14% of the migrants returned to the village of origin at least once a year, and 45% returned at least monthly. Family ties and attachments to the area of origin obviously remain deep.

7.7 Incomes

Distribution of earnings per month for employed respondents is presented in table 7.16.

The majority of respondents earned between 0 and 100 Dinars per month; mean income was 67.8TD/month or 813.6TD/year. Of greater significance, however, are household incomes, bearing in mind that most household have more than one income earner.

Table 7.16 Monthly Income of Employed Respondents

Earnings (Dinars)	No. of Respondents
0 - 50	56
51 - 100	57
101 - 150	13
151 - 200	6
201 - 250	1
250	13
	146

Although a substantial proportion (21%) of households have annual incomes below 500TD, 52% have incomes between 500 and 1500TD. Mean annual household income is slightly over 1200TD. It can thus be concluded that most households in the area, whilst not well off, are above the poverty line. Although the Sahel has always been one of the more prosperous regions of Tunisia, it would appear that rural wealth in the study area has increased over and above rates of increase throughout the country.

An important consideration must be what happens to the village incomes.

It is evident from the above discussion that over the past decade there has been a considerable increase in real incomes at the village level. This has been in part directly induced by specific development policies such as the creation of new employment opportunities, and in part indirectly, by changes in attitudes and in the social environment.

One of the most significant overall changes has been the start of a reversal of the trend for rural society to look townwards and for it to become an attraction in its own right.

The commuter mentality which is developing in the Sahel is evidence of this. Although success on behalf of the development strategists in partially reversing rural to urban migration and in making rural areas more attractive places to live in is to be applauded, it is of little overall value unless there are more material gains made than simply having people returning to the villages to live. It is essential that the increased incomes gained as a result both of improved rural employment opportunities and of opportunities for taking advantage of the benefits of urban employment whilst still living in rural areas be utilised, in part at least, in the further stimulation of the rural economy. The potential for cumulative causation and multiplier effects taking place in the rural economy once the initial stimulus had been provided, was demonstrated in Chapter Two. The purpose of this section is to investigate whether personal incomes as a key component of cumulative causation are in fact being used to further stimulate the rural economy, or whether they are simply flowing back to the urban areas.

Possibilities for direct expenditure in each of the five villages studied were limited; no village had more than three small shops which stocked daily food needs, and only Maatmar had a cafe. Nevertheless, a surprisingly large amount of money was spent in each village (table 7.17).

From the whole sample of 200, just over one quarter of the households surveyed spent between 0 and 5 Dinars per week in their village and just over one-third (37.5%) spent between 5 and 10 Dinars per week. A fairly significant proportion (13.5%) spent between 10 and 20 Dinars a week. Only 6% spent nothing in their own village. Variation in household expenditure between the five villages is noticeable

Table 7.17 Household Expenditure in Village of Residence
(percentage of respondents in each expenditure class)

Dinars	Maatmar	Mesjed Aissa	Menzel Khir	Sidi Bou Othman	Oued Zibs	Total
0	4	6	4	7	10	6
0.1 - 5	16	22	30	36	55	27.5
5.1 - 10	40	32	42	40	30	37.5
10.1 - 20	26	20	4	7	-	13.5
20.1 - 30	-	2	2	-	-	1
30.1 - 40	-	2	-	-	-	0.5
40 - 60	-	-	-	0.3	-	0.5
not answered	14	16	18	0.7	5	13.5
mean household expenditure per week (Dinars)	8.74	9.2	6.83	7.5	4.4	8.26

and, to a certain extent, predictable. In Oued Zibs, for example, over half of the households interviewed (55%) spent less than 5TD and 10% spent nothing at all. This reflects both the paucity of retail outlets in Oued Zibs and the relative poverty of the village. In the remaining four villages, the greatest proportion of households spent between 5 and 10 Dinars per week. Of particular note is the fact that 26% and 20% of households in Maatmar and Mesjed Aissa respectively spent the relatively high amounts of between 10 and 20 Dinars per week in village shops.

Comparative household expenditures between villages are reflected in the mean weekly household expenditure for each village. Oued Zibs has the lowest (4.40 Dinars) and Mesjed Aissa the highest (9.20 Dinars). The average of 7.50 Dinars

per week for Sidi Bou Othman is surprisingly high given the relatively limited expenditure opportunities in the village, but this figure could well be explained by the fact that a new store had recently opened in the village which was considerably better stocked than the older, established one.

Weekly household expenditure in each village becomes more meaningful when related to weekly household income. Obviously, some direct relationship is bound to exist between income and expenditure; no household, for example, is going to be able to spend more in the village than it actually earns. Also, the chances that expenditure will increase with income are also high. However, the relationship is not quite so straightforward.

With the exception of the under 5TD income bracket, the majority of households, regardless of income, spend between 5 and 10 Dinars a week in the village. Again, regardless of income, there does appear to be a maximum expenditure threshold of 20 Dinars/week over which very few households go. This obviously reflects the limited spending opportunities in the villages. The most important feature revealed by the survey is that a number of households spend virtually all of their income in the village on household requirements. Of those interviewed, three households with a weekly income of 5 Dinars or less spent 5 Dinars a week in their village; 2 households earning 10 Dinars or less spent all 10 Dinars in the village and one household with a weekly income of 20 Dinars spent it in its village. That this continues in the present time is extremely surprising. When villages were much more introspective, one would have expected a fair number of households to rely on the village community for virtually all of their needs; but in the present environment, particularly with the villages being more outward-looking, that some households still rely on the village for all their needs is remarkable.

However, it must be emphasised that the proportion would appear to be relatively small.

Comparing the weekly village household expenditure of 8.26TD with the mean weekly household income (23.1TD) is also revealing. Approximately 34% of mean household incomes is spent on direct expenditure in the villages. When it is recalled, however, that this expenditure is limited to just everyday household needs, this represents a substantial proportion. The implication is thus that villagers rely on the village for just about all their daily needs. This consequently ensures that a good proportion of their income is circulated in the village economy.

Moreover, it is apparent that household expenditure within the village is not restricted to just direct family needs. Exactly 50% of respondents interviewed had built in recent years, or were in the process of doing so, additions to their house, or had constructed a new house completely (table 7.18). In so doing, it appeared that primarily local village skills and labour were used (the high proportion of respondents who declared their activity/profession to be construction will be recalled).

Table 7.18(i) Proportion of Respondents Having Undertaken Recent Household Construction/Extension

	Village of Residence					
	Maatmar	Mesjed Aissa	Menzel Khir	Sidi Bou Othman	Oued Zibs	Total
Yes	62	52	46	40	40	50
No	38	48	54	60	60	50
N/a	-	-	-	-	-	-
	100	100	100	100	100	100

The general trend of house improvement was equally apparent in all five villages.

The final area in which there is evidence of a certain proportion of income being retained in the village economy is that of investment in economic activity. As will be made clear in the following Chapter, many farmers who have benefitted from moves to improve agriculture have reinvested their increased incomes in the land or other agricultural activities, such as chicken farms. Occasionally, though, such agricultural re-investment has, to a certain extent, been counter-productive, for a number of farmers have used increased available capital to invest in mechanisation and other labour-saving methods. Opportunities for mechanisation in the Sahel agricultural environment are, however, limited.

In addition to agricultural investment, small-scale rural industrial investment has been noted in some of the villages. In particular, one can note the usine de couture in Mesjed Aissa (under construction November 1979) which, when completed, will employ 18 workers, and the carpet factory in Menzel Khir which employs 48 girls.

There is therefore strong evidence to suggest that the villages investigated are no longer remaining areas of constant drain of human and financial capital. It is apparent that not only are people returning to the villages, they are bringing cash with them which they are not afraid to inject into the village economy. Whether sufficient capital is being attracted, or whether it is being adequately encouraged and directed by policy makers and planners, is questionable. There is scope, for example, for encouraging the development of a wider range of retail outlets, or the provision of various services at the village level. It would also appear that insufficient encouragement is being afforded to the small-scale investor in

rural areas within the framework of the 1974 Law. Nevertheless, it is definitely noticeable that not all the money resulting from the recent increased incomes is flowing out of the villages to the towns.

7.8 Spatial Structure of the Local Economy

An investigation of where the remainder of household incomes go entails not only a study of expenditure in various towns around the study area, but leads also to the spatial structure of the local economy. Accordingly, the following section will look at how the five villages studied fit into the regional economic space.

In many ways, the pattern which evolves from the analysis of the questionnaire is fairly predictable. However, there are a few anomalies that emerge and are worth noting. The average amounts of monthly household incomes spent outside the village are presented in the following table:

Table 7.18(ii) Mean Monthly Expenditure (per Household) by Destination by Village (Dinars)

Destination of Expenditure	Village of Residence: Maatmar	Mesjed Aissa	Menzel Khir	Sidi Bou Othman	Oued Zibs
Ouardenine	4.80	8.78	12.83	17.65	13.06
Monastir	14.25	11.30	14.63	19.00	9.38
Sousse	40.11	32.07	25.67	23.50	15.63
Tunis	12.50	83 (1)	27.5 (2)	-	-
Sahline	27.58	15.86	12.94	11.08	13.57
Djemmal	2.00	-	8.86	13.6	18.08

(1) Only 1 person from M. A. spent anything in Tunis

(2) Only 1 person from Menzel Khir spent anything in Tunis

Sousse is patently the main town where villagers spend income over and above that which is spent in their own village,

but as this is the largest town in the area, and easily accessible by bus from all five villages, this is hardly surprising. What is slightly more surprising, however, is the relatively low proportion spent in Monastir. However, if an individual is going to make an effort to visit a larger town for anything, then given the choice of Monastir and Sousse, both roughly equidistant but with better transport services to Sousse and certainly a greater range of services available there, then it is highly probable that Sousse will be the first choice. That relatively high amounts are spent by householders from all five villages in Sahline (monthly expenditures ranging from 27.5TD from Maatmar - less than 1km away from the village - to 11.08TD/month/household from Sidi Bou Othman) suggests that Sahline is used as the local sub-regional service/provisioning centre. It is certainly easily accessible to all five villages and has a wider range of facilities than any of Maatmar, Mesjed Aissa, Menzel Khir, Sidi Bou Othman and Oued Zibs - including a blacksmith, petrol pump, chemist and photographic shop. It is interesting to note, however, that for the villages of Sidi Bou Othman and Oued Zibs and, to a certain extent, Menzel Khir - (that is, the villages furthest from Sahline), orientation toward a sub-regional service centre is split between Sahline, Ouardenine and Djemmal. This is purely due to physical distance; Djemmal in particular is closer to Sidi Bou Othman and Oued Zibs than is Sahline, although public transport and good roads make access easier to Sahline. A final point to note is the lack of people who went to Tunis for any shopping, and the few that did inevitably spent fairly substantial amounts on infrequent visits in order to make the time and effort of the journey worthwhile.

The pattern of household income distribution outside the village is reinforced by an examination of responses to questions relating to how often respondents visited nearby

centres, what they went there for and where they went for a particular list of services.

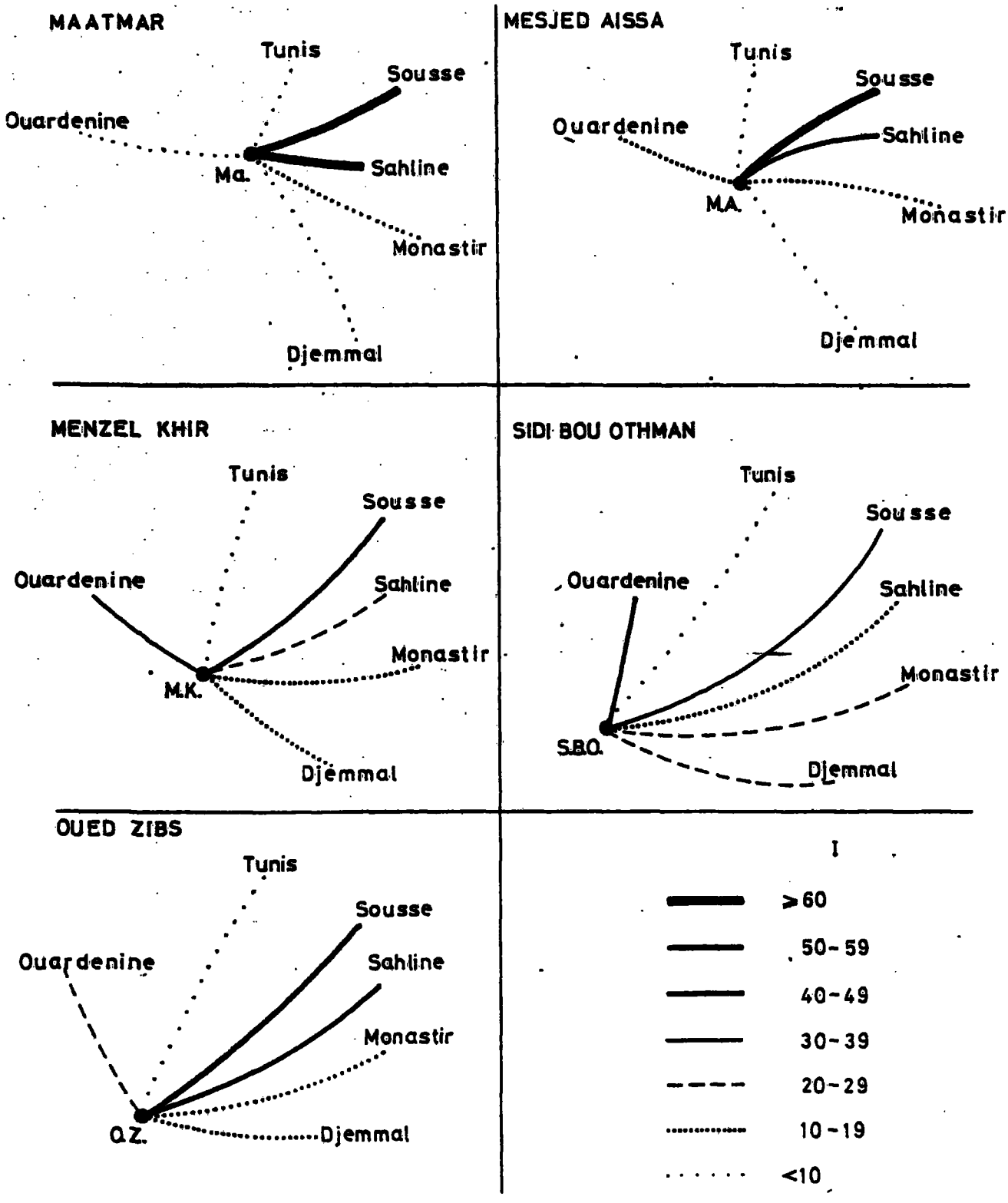
Using the results from the question 'how often do you visit the towns of Ouardenine, Monastir, Sousse, Tunis, Sahline and Djemmal?' (the main towns of the area plus Tunis), an index has been constructed based on the percentage of respondents from each village who replied that they visited town X frequently, sometimes or never. The results of this are presented in figure 7.3. The patterns suggested by an analysis of expenditure figures are repeated, but emphasised. For the village of Maatmar it will be seen that by far the strongest flows are to Sousse and Sahline (70 and 74.5 respectively). A flow strength of 13.5 to Monastir is the only other flow of significance, and even this is relatively weak. Flows from Mesjed Aissa reveal a similar pattern with slightly different strengths. Flow strengths of 64.5 and 40 to Sousse and Sahline respectively are weaker than those for Monastir, but are still nevertheless the strongest in evidence. A flow strength of 10 to Ouardenine can also be noted.

For the other 3 villages, Ouardenine becomes a much more important destination (flow strength of 48.3, 31.5 and 26.4 for Sidi Bou Othman, Menzel Khir and Oued Zibs respectively), even exceeding the flow strength to Sousse in the case of Sidi Bou Othman (34.7). With flow strengths of 48.5 and 52.5 from Menzel Khir and Oued Zibs respectively, Sousse, the largest city, is constant in its appeal as, indeed, is Sahline, thus supporting the view put forward above, that Sahline serves as the sub-regional service point.

For inhabitants from all five villages, Monastir would appear to hold some, but not much, appeal. Flow strengths to Monastir vary from only 10 (Mesjed Aissa) to 20 (Sidi Bou Othman). Djemmal, on the other hand, whilst attracting few people from

7.3

RELATIVE APPEAL TO RESPONDENTS OF REGIONAL COMMERCIAL CENTRES



$$I = f \cdot \frac{s}{4}$$

Where:

f = % of respondents who visit town x at least once per week

s = % of respondents who visit town x approx. once per month

Maatmar or Mesjed Aissa, attracts a significant proportion of people from Menzel Khir (9), Sidi Bou Othman (23.3) and Oued Zibs (13.25). This is again indicative of the fact that Djemmal, as a small rural town, offers many services and facilities without the inconvenience of travel to Sousse or Monastir.

From the questionnaires one can be more specific on the appeal of the various regional centres under discussion.

Table 7.19 Main Commodity for Which Local Centres are Visited by Residents of the Five Villages.

Commodity	Destination (%)					
	Ouardenine	Monastir	Sousse	Tunis	Sahline	Djemmal
Fresh Food	78.9	34.6	3.2	-	81.5	54.7
H/H Goods	2.2	29.5	30.1	30.8	2.5	3.8
Services and Admin.	5.6	16.7	1.3	23.1	0.8	1.9
Misc.	2.2	1.3	1.9	46.2	3.4	11.3
Specialised Goods	1.1	2.5	-	-	-	-
Everything	10.0	15.4	63.5	-	11.8	28.3
	100	100	100	100	100	100

Table 7.20 Centres Utilised for Certain Services by Respondents from the Five Villages

Service	Centre (% of total respondents)					
	Sousse	Monastir	Djemmal	Ouardenine	Sahline	Other
Bank	73.6	21.8	-	3.4	1.1	1.1
TV and Radio Repairs	76.0	10.2	7.8	11.4	14.4	1.2
Chemist	60.7	18.3	5.4	10.2	32.3	1.1
Post Office	30.4	5.0	2.2	22.1	60.2	13.3
Furniture	83.9	10.3	6.3	2.3	7.5	0.6
Insurance	76.2	23.1	3.1	3.8	0.8	-
Market	79.0	7.5	38.2	19.4	12.9	1.6
Clothes	93.2	13.0	6.3	1.6	1.6	1.0

NB: Totals are >100% because some people used more than one place.

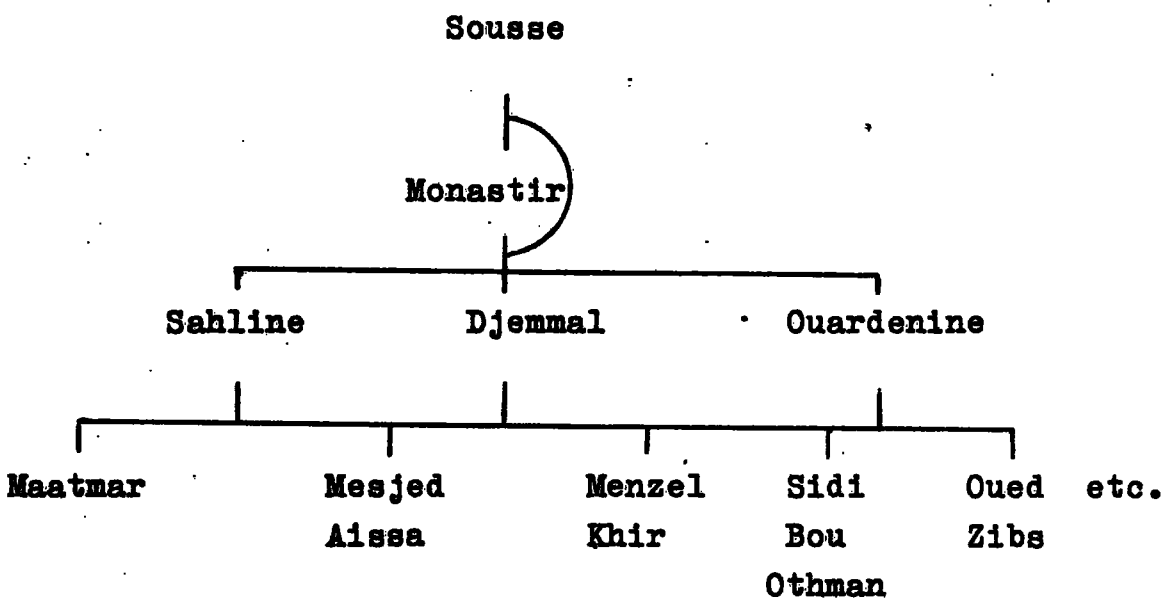
The attraction of Sousse is clearly that everything is available in one place - not only daily needs, foodstuffs and various household goods, but services such as banking, TV and Radio repairs, clothes and furniture shops. (tables 7.19 and 7.20). Similarly those who do go to Monastir are attracted by the wide range of facilities available - again everything that is needed can be obtained in one place. For both towns it must not be forgotton either, that people will also be making one-off trips for things that are required as infrequently as once a year (e.g. insurance).

Ouardenine and Sahline both clearly serve similar functions. Of the people who go to Ouardenine, 78.9% go for fresh foodstuffs; for Sahline, the figure is 81.5%. A limited number of people try and use the two towns for all their needs (15.4% and 11.8% for Ouardenine and Sahline respectively) but on the whole, their function in the eyes of the villagers appears to be that of a point where most things not obtainable in their own village but needed on a short-term basis can be obtained without the hassle of a journey to Sousse or Monastir. A similar role is played by Djemmal, although, unlike Sahline and Ouardenine, it is of little appeal to residents of Maatmar and Mesjed Aissa. One of the main attractions of Djemmal, however, is its weekly market. The Djemmal market, along with those of Ksar Hellal, Moknine, Sousse and Monastir, is one of the major periodic markets in the region.

In the light of the above discussion, a number of conclusions can be drawn about the structure of the economic space in the region. The first point is that Sousse undoubtedly and unsurprisingly dominates the area. It is the main pole of attraction in terms of employment, services and retail outlets; but, given that it is by far the largest town in the area, such a conclusion is not unexpected. Monastir is

the 'second city of the region', but very much a poor second. With Sousse in such close proximity, Monastir really suffers, and if it were not for the fact that the town is Bourguibas birthplace, the tourist industry and the fact that it has recently been made a governorate seat, the town would be struggling to survive. In terms of wider urban functions, Monastir is something of a non-entity. Ouardenine, Sahline and Djemmal on the other hand coexist at an important functional level in the regional settlement hierarchy:

Figure 7.4 Structure of Regional Economic Space



All three serve as sub-regional centres providing a focal point for middle-level functions such as chemists, secondary schools and small-scale industrial concerns. Elsewhere in the thesis (Chapter Six) the question of the viability of Ouardenine as a sub-regional growth pole was raised. In the light of the above discussion it is clear that, to a certain extent, Ouardenine does already exist as such. However, the question really is whether it would be viable to channel even more investment into it and create a town something similar to the scale of Djemmal. Partially to find the answer to this

question, respondents were asked if they would be prepared to make more use of Ouardenine should services there be improved, and the results from this are presented in table 7.21.

Table 7.21 Proportion of Respondents Willing to Make Greater Use of an Improved Ouardenine
(% of respondents by village)

	Village of Residence					
	Maatmar	Mesjed Aissa	Menzel Khir	Sidi Bou Othman	Oued Zibs	Total
Yes	40	42	56	40	-	40.5
No	56	48	28	23.3	-	36.5
N/a	4	10	16	36.7	100(1)	23
	100	100	100	100	100	100.0

(1) All respondents said they already used Ouardenine.

Respondents in Menzel Khir, Sidi Bou Othman and Oued Zibs seemed keener on the idea (the majority in each said yes) than did those in Maatmar and Mesjed Aissa, where 56% and 48% respectively were against the idea. There would therefore seem to be a divided opinion, which in fact reflects current patterns of useage of Ouardenine.

Two major problems can be forseen with the development of Ouardenine as a sub-regional pole. In the first place, it would be in direct competition with Sahline. The two settlements are close together and, in many ways, Sahline is already on a par with Ouardenine, and indeed has a slight edge over it in some respects, such as its nodality. This therefore raises the question as to whether perhaps Sahline should be considered as a sub-regional growth pole - but the same argument applies. One could not grow without the demise of the other, which would,

to a certain extent, defeat the overall objective - there would simply be a shift of resources instead of a significant overall increase.

The second problem is that Ouardenine's hinterland is very limited, again when compared to Sahline. Settlements in the Ouardenine vicinity which are not looking also to Sahline are either very dispersed, or oriented more to the large town of Msaken to the north-west. On balance, therefore, the evidence is weighted in favour of maintaining the current status quo between the two settlements. There is certainly no argument against developing both, but to focus on one in favour of the other would, it is suggested, be a mistake.

7.9 Habitat

One of the three main objectives of the PDR is amélioration des conditions de vie; the purpose of this section is to investigate the progress made in the improvement of living standards, with particular reference to the environment within which people are living in the five villages. Two levels will be examined - that of the village itself, followed by a study of household conditions.

7.9.1 The Villages

a) Roads: The construction of roads and the improvement of accessibility has been one of the main areas of expenditure in the improvement of living standards budget since 1974 (see previous Chapter). Consequently, it has been found that all five villages are now easily accessible by either tarred road or well-constructed track (piste). Maatmar is linked to Sahline and Sidi Ameur by good tarred roads and to Thrayet by a good piste. The roads in the village, however, are less adequate. The main street, although tarred, is badly potholed and extremely

uneven. Other feeder tracks within the village are in a diabolical state - totally unprepared and very badly rutted. This is fine in summer, but with heavy rain, the morass into which these tracks turn can be easily imagined. The pattern for Maatmar is similar for all of the other villages (table 7.22).

Table 7.22 Village Accessibility

Village	Tarred road to:	Good Piste to:
Maatmar	Sahline, Sidi Ameur	Thrayet
Mesjed Aissa	Monastir-Ouardenine	-
Menzel Khir	Sousse-Mahdia	Monastir-Ouardenine road
Sidi Bou Othman	Menzel Khir	Oued Zibs Ouardenine
Oued Zibs	-	Sidi Bou Othman, Bir Taieb (Djemmal)

Whilst access to each village is good for all kinds of transport (a bus service runs to all villages except Oued Zibs), roads within each village are extremely poor. In all villages except Oued Zibs the main street is tarred, but often pot-holed and in an extremely poor state of repair. No village has any form of drainage whatsoever. Consequently, not only do the streets become streams during periods of heavy rain, but all houses empty their dirty water directly onto the street. The result is easy to imagine - unpleasant, smelly and very unhygenic conditions in the streets which, in the heat of summer, must be the source of many an infection. Even human waste is inadequately catered for - most houses have cess-pits dug under their houses into which this domestic sewage is drained.

It is slightly ironic to note, however, that the main street in each village is now equipped with street lighting.

It can be seen on plans drawn by the D.A.T. (Sousse), that the development

planners have not yet finished with their planned road development from Maatmar, a new route is planned to Zauoia Sousse; from Mesjed Aissa, two new routes to Menzel Harb; from Menzel Khir, two new routes, one to Djemmal and one to Ouardenine; and from Sidi Bou Othman, a new route to Ouardenine, one to Djemmal and an improvement of the route through Oued Zibs to Menzel Kamel are all projected. For the latter three villages, the new routes will be a definite advantage. Until they are built, good access to Menzel Khir, Sidi Bou Othman, and Oued Zibs is restricted to the north and east. However there really seems little point in linking Mesjed Aissa directly with Menzel Harb by even one route, let alone two, as it requires a very small detour to travel east to the Sousse-Mahdia road and then south for 3kms to Menzel Harb, which straddles the main road. Similarly, there seems little value in the construction of a new road from Maatmar to parallel that which already exists to Thrayet.

It can also be noted, though, that within each village a new street layout with improved surfaces is anticipated by the DAT. This layout includes for each village (except Oued Zibs), a bypass route and new feeder roads to the separate sectors of the village. These, however, are long-term plans as there is little need for the construction of such routes as yet - particularly as many of the planned feeder roads 'feed' sectors that at present are mere wasteland. Although the main street in each village is very narrow, neither can there be much call in the near future for the construction of new 'by pass' routes. Surely it would be far better to resurface existing village tracks and provide adequate drainage.

b) <u>Facilities:</u> A second component of the PDR's budget for the improvement of rural living standards is to provide, or encourage the development, of certain facilities at village

Table 7.23 Existing Village Facilities

Facility	Village				
	Maatmar	Mesjed Aissa	Menzel Khir	Sidi Bou Othman	Oued Zibs
Cafe	1	x	x	x	x
Shop	3	3	2	3	2
Post Office	x	(a)	x	x	x
Medical facilities	✓	✓	✓	✓	x
Maison du peuple	x	✓	x	✓	✓
Maison des jeunes	x		✓	x	x
Primary School	✓	✓	✓	✓	x
Mosque	✓	✓	✓	✓	x
Public water point	2	2	1	1	1
Household water supply	✓	✓	✓	✓	x
Electricity	✓	✓	✓	✓	(b)
Sports facilities	✓	x	x	x	x

(a) Under construction Nov. 1979
(b) Provided Dec. 1979

level, including such aspects as the provision of water and electricity supplies and ensuring that at least basic health services are available. Table 7.23 lists the facilities available in the villages investigated.

Although potable water is supplied to every village in Monastir governorate there are a number of villages, of which Oued Zibs is one, which rely solely on public water points. In the case of Oued Zibs, villages have to walk 0.5km from the village, up a hill, in order to reach a standpipe. The water-pipe itself is in a poor state of repair and leaks badly. Despite the existence of a large stone trough, a great deal of water inevitably spills to the ground, resulting in a miniature sea of mud. Water is piped to most houses in the other four villages, although public water points still exist in each

village and are used by a number of families. Similar problems exist with the maintenance of these water points, and in the case of Menzel Khir, one finds the one public water point being shared both by people collecting domestic water supplies and donkeys, mules and various other assorted animals drinking from the same source. As water is such a well-known potential carrier of a variety of diseases, it seems strange that, having bothered to ensure the provision of water to all villages, the authorities have not taken just a little more time and effort to ensure its better distribution. If it is necessary to have public water points to meet the domestic needs of some of the population, then why are simple measures such as concrete bases around the water points with some form of drainage, plus efficient taps, not utilised both to enable a reduction in water wasteage and to minimise the health risk?

A slightly better situation exists with regard to electricity supplies. All of the villages, except Oued Zibs have power supplied to them, to which any household has access, subject to payment of installation fees (variable, but low - approximately 3TD). Even in Oued Zibs electricity was being installed at the time the village was being studied (autumn 1979).

Health service provision is also a major concern of the PDR. The overall health programme in the governorate was reviewed in the previous Chapter, but in relation to the villages of particular concern to this study it can be noted that all villages have relatively easy access to medical services. In the case of Maatmar inhabitants do, at the moment, have to go to Sahline for treatment, but construction of a dispensaire in Maatmar itself is planned for some point in the near future.

A similar situation exists in Sidi Bou Othman/Oued Zibs. A dispensaire with regular nursing staff is open in Sidi Bou Othman to which a doctor comes weekly, and it is to this that inhabitants of Oued Zibs have to come. However, given the small size of Oued Zibs and its relative proximity to Sidi Bou Othman, it would be unrealistic to expect a dispensary in Oued Zibs on its own. Both Mesjed Aissa and Menzel Khir have dispensaires of their own, both of which are visited once a week by a doctor and ... staffed every morning by a qualified female nurse.

Unlike the health centres, which are relatively recent developments in the villages (all three were opened 1978/79), primary schools have existed in each village (except Oued Zibs, whose children go to the school in Sidi Bou Othman) for over a decade. The village primary schools are all very similar; they are staffed by just one or two teachers which entails staggered lessons for the children. This is due more to a shortage of teaching staff than anything else, a problem common throughout Tunisia. The buildings used for schools are all purpose-built and perfectly adequate for their needs, with two or three rooms and a playing area. For secondary education the children go to lycées in either Ouardenine, Sousse or Monastir.

The importance of community facilities and institution building to IRD has been emphasised throughout the thesis. In the previous Chapter, the role of the PDR in the direct stimulation of community consciousness through the provision of maisons du peuple and other community hall type buildings such as youth centres, was outlined. In Ouardenine delegation, a gradual emergence of such institutions can be noted. In Mesjed Aissa, possibly the most 'modernised' of the five villages under investigation, a new maison du peuple, built by the army (conscripts) was opened in the autumn of 1979. The ground floor of the building has been used by the PDR to establish a small

carpet factory employing 12 women, whereas the first floor consists of a large room which is used for public meetings, by the PSD cell for its meetings and by the village youth as a kind of youth club (t.v., table tennis, chess and miscellaneous games have been provided by the PDR). Menzel Khir also has a community hall, but oriented much more to the youth of the village. Although available for public and political meetings, it is intended much more as a maison des jeunes, again with a range of leisure goods provided for from the PDR budget. Half-way between Sidi Bou Othman and Oued Zibs, a small square building has recently been built and opened (July 1979). Apparently, this exists as a maison du peuple for the two villages-being located half-way between them so as not to upset inhabitants in either. The building, however, appears totally unsuited to its purpose. It is extremely small, has no equipment of any kind, including tables and chairs and, despite being new, its run down appearance suggests a definite lack of use. As with the provision of water supplies, this maison du peuple exhibits the same lack of careful thought put into the actual implementation of what are basically sound plans on the behalf of the PDR. To carry out such compromises as this is a complete waste of limited resources.

Of the five villages, Maatmar is the only one without its own community centre, although the construction of one is proposed next to the planned dispensary. Until it actually appears, villagers, to their chagrin, have to rely on Sahline. This is yet another example of the way in which the interests of Maatmar appear to have been subjugated to those of Sahline - primarily because it is part of the three village commune, in which it is very much the poor relation.

Another apparent waste of limited resources is associated with the PDR's obsession with sport. Whilst it is accepted

that football is a highly popular sport in Tunisia, with a large following, it is strange that high on the priorities for development in both Sidi Bou Othman and Menzel Khir are new full-sized football pitches, complete with running track. Such a facility already exists in the area between Maatmar and Sahline, with another more fully-equipped stadium in Ouardenine. One would certainly not wish to criticise provision of these two existing stadiums, particularly in the vicinity of the two largest concentrations of population in the delegation, but to even contemplate the construction of two more in relatively remote villages, particularly when there are still areas with inadequate basics such as decent water supplies, seems to be a totally misplaced sense of priorities on behalf of the PDR.

A last significant community institution at village level is that of the mosque. As Tessler has shown, changes in Tunisia since independence have not always met with the full approval of the religious stalwarts of the country (Tessler 1980). In recent years, particularly since the Iranian revolution, there has been a noticeable increase in the strength of the religious voice of opposition to Tunisian policies. Whilst as yet Islam does not represent a serious threat to Bourguiba and his leadership, as the religious opposition is not sufficiently organised and is too diverse, there have been hints of its latent force. One of the major concerns of the political leadership is the freedom enjoyed by the mullahs to stand up in the mosques and throw criticism at the state for its lack of concern for religion. With a marked increase in active practising of Islam in Tunisia, the politicians are aware that seeds of discontent are being sown throughout the mosques. Although this is supposition, it is the author's belief that one of the means being utilised to combat this potential threat

to stability in Tunisia is for the government, supposedly under the auspices of the PDR, to put aside capital for the refurbishment or even complete reconstruction of mosques in the villages of Tunisia. Both Mesjed Aissa and Menzel Khir have got new mosques; the mosque in Menzel Khir was completed in 1980 and that of Mesjed Aissa is a very splendid building for such a relatively small village. It has been strategically located, built on the crest of a ridge with its minaret dominating the countryside over a large area. Although not yet started, a new mosque is also planned for Maatmar. Whilst it is accepted that a certain amount of local money has been made available for these new mosques, reflecting the increase in local prosperity, there is also evidence to suggest that there is substantial government involvement. It would be too cynical to suggest that public funds are being made available for mosque construction solely in order to enable the politicians to have some claim to control what is said in the mosques; after all, Tunisia is, by its constitution, an Islamic Republic, but it is suggested that there is an element of truth in this argument.

Finally, reference must be made to the retail outlets existing in the five villages. These were mentioned in the preceding section, but it is worth decrying the fact here that, although each village has two or three small stores, goods available from them are extremely limited. As proven above, these stores do meet the day-to-day requirements of villages. They also act as a meeting place in which men sit and drink tea in all the villages except Maatmar where there is a café. Surely there is scope, if it is the PDR's intention to improve living conditions at the village level, to try and provide some incentive for these shops to both widen their stock and to brighten up the shops. At the moment, in some

cases, they are little more than fly-ridden holes in the ground. It is recognised that these stores perform a crucial role in the social fabric of the village, but this need not be lost for the sake of a little improvement in standards. A broadening of available services would also be valuable. A post office is being constructed in Mesjed Aissa; one would also be welcomed in Maatmar and Menzel Khir. One of the benefits of having a post office would be that each village would then have access to a telephone. At the moment in Menzel Khir and Sidi Bou Othman it is only the omda who has access to one.

c) Village Environment: To conclude this section on the overall village environment, reference must be made to the general visual character of the village. As intimated above, the villages are not clean and tidy places in which to live. Their lack of drainage is a prime cause of this resulting in rough streets which often act as open sewers. In addition, there is no provision in any village for the disposal of household rubbish; not even single sites exist where rubbish can be deposited. Instead, residents tend to throw any household debris into odd corners of streets, or simply to throw rubbish into any of the open spaces within the village. Unlike the towns and larger villages, there is no man with a horse and cart coming around late at night to clear away the day's accumulated debris.

Open spaces appear to play crucial roles in the village fabric. Three of the villages (Maatmar, Mesjed Aissa and Menzel Khir) studied had at least one public open space, usually at the centre of the village, around which were clustered buildings such as the mosque, café/shop and maison du peuple. In Menzel Khir, the space is situated at the northern end of the village, where the track to Ouardenine joins the main through-street. Around the space are situated the dispensary, main shop, water point and maison des jeunes. Aesthetically, however,

the area is very bare - no trees or other growth to break the scene. The area does appear to play a role in the village life as a place for informal congregations of people, particularly young men, in the early evening. The central open space in Maatmar is very similar to that of Menzel Khir, except that a large Eucalyptus tree provides a degree of shade and 'aestheticism' to the area.

Mesjed Aissa, on the other hand, has two large areas, plus an olive grove in the centre of the village. The first area, surrounded by the mosque, dispensary, maison du peuple and, eventually, the Post Office, is very spartan and functional, simply a dirt square. The other area, however, is totally different. In the first place it is slightly hollowed; it has a number of eucalyptus and other trees growing in it and is surrounded by houses. This area has considerable potential as a pleasant recreational area within the village. However, at present, and in common with open areas in all of the villages, the area is used primarily as a rubbish dump and for animals to scavenge on. The importance of public open spaces has been clearly recognised by the planning authorities.

But, if they are going to develop such areas, and realise their potential, then some effort has to be made to control the filth that accumulates in the villages. Given that people are being attracted back to the villages for their peace, tranquility and calm, it is surely a part of the responsibility of the development authorities to ensure that the image to which these people are returning is a reality and not swamped by plastic bags, rotting cardboard boxes and empty tins of tomato purée.

At the moment, first visual impressions of the villages are of dereliction and decline of the building fabric.

Closer inspection reveals that in fact many homes are investing money into the refurbishment and improvement of private buildings. This, indirectly, is having the effect of partially improving the quality of the villages as a place to live. Given that the villagers are making this effort, then surely it is the least that they can expect from the local authorities to provide at least minimal services to maintain some degree of cleanliness in the villages.

7.9.2 The Houses

Consideration must now be given to the individual household characteristics. For this, data collected from the questionnaires can be utilised. Virtually all of the houses in the villages are owner-occupied (table 7.24).

Table 7.24 Household Ownership Characteristics

Tenancy	% of respondents in each village					
	Maatmar	Mesjed Aissa	Menzel Khir	Sidi Bou Othman	Oued Zibs	Total
Owner Occupied	90	96	84	66.7	100	87.5
Rented	6	-	-	3.3	-	2.0
Government Logement	2	4	16	16.7	-	8.0
House part of job	-	-	-	10.0	-	1.5
n/a	2	-	-	3.3	-	0.5
	100	100	100	100	100	100

Only a small proportion of people rented houses (7% of those interviewed) and those who did, tended to rent them from friends or relatives who had left the village and wanted someone that they knew to look after their house. This dominance of owner-occupancy would appear to have been a feature of the villages for decades; 70% of the respondents or their families had lived in the same house for over 150 years and 25% had

occupied the same house for more than 100 years. One innovation in recent years, however, has been the introduction of government logements, or maisons populaires (table 7.25).

Table 7.25 Government Logements in Each Village

Maatmar	10
Mesjed Aissa	50
Menzel Khir	25
Sidi Bou Othman	20
Oued Zibs	-

In rural areas throughout Tunisia these have been constructed since independence. In the villages studied, the logements of Menzel Khir, Sidi Bou Othman Maatmar and half of those in Mesjed Aissa were constructed prior to the instigation of PDR. With larger ground area and much sounder construction, the older logements seem to be a definite improvement on the newer ones which have been paid for by the PDR. These are more cramped and poorly constructed. Nevertheless, as indicated in the previous Chapter, the logements, old and new, represent a considerable improvement to the standards of living to which some families have been accustomed.

Despite the proliferation of new additions, modifications and even construction of new houses that has been noted, the average age of the houses in the villages is high (table 7.26).

Over all five villages, 46.5% of respondents' houses were more than 100 years old. However, the age group with the second largest proportion is that of houses less than 10 years old. This reflects the construction boom in the villages. It will be noted that there is little significant variation between villages.

Table 7.26 Distribution of Houses by Age Group

Age Group	% of houses in each Village					
	Maatmar	Mesjed Aissa	Menzel Khir	Sidi Bou Othman	Oued Zibs	Total
10	14	18	28	40	25	23.5
10-25	14	20	8	6.7	-	11.5
26-50	12	12	6	6.7	-	8.5
51-75	2	-	4	-	10	2.5
76-100	2	2	-	3.3	-	1.5
100	32	48	54	43.4	65	46.5
n/a	24	-	-	-	-	6.0
	100	100	100	100	100	100

As for the housing type in the villages, most conform to the standard arab dwelling; single storey and inward - looking to a courtyard; 95% of respondents' houses had just one floor and 92.5% were centred on a courtyard. In one or two instances, particularly in Mesjed Aissa and Menzel Khir, second storeys had been added to buildings, or in one or two cases, very splendid two storey villas had been built by migrants returning to the village. That most houses conform to the standard functional model of arab dwellings is reinforced by the fact that over the five villages 35.5% of the households still kept animals in their courtyard - ranging from chickens and ducks, to mules and sheep (table 7.27).

Table 7.27 Proportion of Respondents Keeping Animals Within their Courtyard

	Village (%)					
	Maatmar	Mesjed Aissa	Menzel Khir	Sidi Bou Othman	Oued Zibs	Total
Yes	26	26	36	36.7	55	35.5
No	64	74	64	63.3	45	64.5

The proportion that still did this, however, was much higher in Oued Zibs (55%), by far the most 'traditional' of the five villages That only 26% continued the practice in Mesjed Aissa is another indication of its more rapid adaptation to development than the other villages.

Although water and electricity have been supplied to four of the five villages, not all residents have yet taken advantage of this. (table 7.28).

Table 7.28 Proportion of Respondents with Running Water and Electricity

Utility	Village (%)					
	Maatmar	Mesjed Aissa	Menzel Khir	Sidi Bou Othman	Oued Zibs	Total
Piped Water						
Yes	90	96	82	56.7	-	75.5
No	10	4	18	43.3	100	24.5
Electricity						
Yes	92	94	72	66.7	-	74.5
No	8	6	28	33.3	100	76.5

Residents in both Maatmar and Mesjed Aissa appear to have taken fullest advantage of both services, but the proportion with electricity and water declines in both Menzel Khir and Sidi Bou Othman. In Menzel Khir, of those interviewed, 18% still had not had water connected to their house and 28% were still without electricity; in Sidi Bou Othman, the proportions were 43.3% and 33.3% respectively. It has to be pointed out, however, that the lack of water or electricity in a house in a village to which both have been supplied, is not the fault of the development authorities. Once the services are supplied to the village, it is up to the individual to request for, and pay a small and variable (dependent on means) financial contribution to,

installation. For those without electricity and water, it may be because they feel that they can manage without it. However, it is worth emphasising that it is the villages of Sidi Bou Othman and Menzel Khir in which proportions without the two services are highest, again indicative of the differential adaptation to development within the villages.

Despite the relatively large proportion of households with water supplies, few have either hot running water or a separate bathroom (table 7.29).

Table 7.29 Proportion of Respondents with Hot Running Water and Bathroom

Facility	Village (%)					
	Maatmar	Mesjed Aissa	Menzel Khir	Sidi Bou Othman	Oued Zibs	Total
Hot Water						
Yes	14	10	6	10	-	9
No	86	90	94	90	100	91
Bathroom						
Yes	18	24	8	10	-	14
No	82	76	92	90	-	86

Overall, just 9% have hot water in their house and 14% have separate bathroom. With the exception of the relatively high 24% of households surveyed in Mesjed Aissa having a bathroom, variation of both variables between villages is minimal.

On the other hand, a much higher proportion of households do have a separate cooking area (table 7.30). Overall, 77% of the households surveyed had separate kitchens, but in Oued Zibs the proportion dropped to just 30%. Again it was the village of Mesjed Aissa with the highest proportion (94%) with this particular facility.

Table 7.30 Proportion of Respondents with Separate Kitchen

	Village (%)					
Separate Kitchen	Maatmar	Mesjed Aissa	Menzel Khir	Sidi Bou Othman	Oued Zibs	Total
Yes	88	94	74	66.7	30	77
No	12	6	26	33.3	70	23

A final variable which can be examined in relation to household living conditions, is the number of rooms and its relationship to the number of residents in a household (table 7.31).

Table 7.31 Number of Rooms per Household
(Proportion of Residents in each Category)

	Village (%)					
No. of Rooms	Maatmar	Mesjed Aissa	Menzel Khir	Sidi Bou Othman	Oued Zibs	Total
1	6	4	12	20	20	10.5
2	14	24	28	20	55.5	25.0
3	34	28	22	23.3	25.5	27.0
4	28	28	16	26.7	-	22.0
5	6	10	6	10	-	7.0
6	8	6	8	-	-	5.5
7	4	-	2	-	-	1.5
9	-	-	4	-	-	1.0
12	-	-	2	-	-	0.5
mean No. of rooms per household	3.54	3.34	3.5	2.87	2.05	3.23

Over the whole study area, the mean number of rooms per household is 3.23. This figure, however, varies from 3.54 in Maatmar to as low as just 2 rooms per household in Oued Zibs. These figures become particularly relevant when compared with the average number of residents per household in each village:

Maatmar	Mesjed Aissa	Menzel Khir	Sidi Bou Othman	Oued Zibs	Total
6.408	6.7	7.6	7.733	5.65	6.905

With an overall mean of nearly 7 people per household living in an average of 3.23 rooms, one gets a mean ratio of 2.14 people per room (table 7.32).

Table 7.32 Mean Number of Persons per Room

Maatmar	Mesjed Aissa	Menzel Khir	Sidi Bou Othman	Oued Zibs	Total
1.8	2.01	2.17	2.70	2.77	2.14

This ratio, however, varies substantially from village to village. In Maatmar it is as low as 1.8 persons/room, whereas in Oued Zibs it reaches 2.77 people per room. However, over all, none of the densities are excessive.

The examination of the above variables relating to individual household living conditions suggests that in all villages, except Oued Zibs (and this is at present being rectified), basic needs are now met. However, it is only in Mesjed Aissa, and, to a certain extent, Maatmar, that living conditions rise significantly above basic needs. It is apparent that the more rural the village, the lower it lies on the development ladder. This pattern must be inevitable to a certain extent, because, by definition, these villages are more remote and will take longer to achieve the attributes of development.

7.10 Social Structure and the Role of the Family

Due to the author's lack of Arabic, information available in this particular field is very limited. Statements therefore have to be made with great care. Neverthless, it is felt that a number of inferences drawn from field investigations are worth noting, primarily in order to support, or reject, investigation made by other researchers in the area.

Working in the town of Testour in the middle Medjerda valley, Hopkins has noted that as a result of economic changes since independence - primarily a change in the mode of production from self-sufficiency to market orientation with increased use of wage labour - a class system has emerged that did not previously exist (Hopkins 1977). The same cannot be said to have happened in the Sahel. The rural population of the Sahel has always been, and still is, predominantly a population of rural middle-class (Allman 1979). Prior to independence, the economic base was predominantly that of olive farmer or small merchant; this base has changed somewhat, as demonstrated above, but the new economic activities are still essentially middle-class. There is no evidence to suggest that a new class structure is emerging. If anything, it could be suggested that there is a move to greater social equality in the rural sector of the Sahel. Abu Zahra has shown this happening in one of the villages of the area (Abu Zahra 1972) and it is not unrealistic to assume similar movements elesewhere in the region. Certainly, nothing from the questionnaires or field surveys indicates anything to the contrary. The one change in social structure which is noticeable, however, is the fact that younger people are now achieving higher social status at earlier ages than in the past. This can be attributed directly to new education and employment opportunities. This particular phenomenon was also noted in the village of Thrayet (Nassif 1978).

Whilst there has been no major change in the class structure of the Sahel, changes are markedly in evidence at lower levels of the social hierarchy. The extended family was the fundamental unit of the traditional society. Today, the extended family structure is crumbling and the nuclear family is becoming increasingly dominant. This trend can be seen throughout Tunisia (Hawker 1976) and its occurence in the Sahel has been positively

identified in Thrayet (Nassif 1978). The extended family is still important. The blood ties and the qaraba (an implicit code of values, norms and conduct by which a village lives, based on the extended family) have been too much of an important part of Tunisian rural society for it to die away completely in the relatively brief period since independence. In the five villages central to this Chapter, many households still comprised more than two generations (of those questioned this was true for over 20%), and brothers, cousins and uncles still played an important role in the economic cohesion of the household.

However, there is no doubt that in all the villages studied the extended family is slowly giving way to the nuclear family. The reasons for this are several. New employment opportunities for both men and women are giving families greater economic independence and reducing an immediate family group's dependence on its relatives. (This has in itself brought about problems - married women going out to work need somewhere to leave their children, yet this is becoming increasingly difficult because of the decline of the extended family). The Code of Personal Status gave women greater independence and increased their relative position in society. This has undermined one of the major underpinnings of the extended family - that the man dominated the woman. The encouragement at national level of family planning has also been a contributory factor - the chance to plan families and to limit their size has contributed to a decrease in mean family size, thus creating smaller, more compact family units. The role of family planning must not be over-emphasised, as it s impact in rural society is by no means universal, but it nevertheless has had some effect on social structure.

Another factor contributing to this change in social

structure has been the increase in physical mobility, particularly since independence. This has led to the physical separation of extended families. The return to villages of birth noted above does not, however, seem to have led to a return to the use of the extended family. The independence experienced by individuals and families in their moves has been retained.

To conclude this section, consideration needs to be given to the role of women in village life. There is no doubt that the Code of Personal Status gave a degree of legal emancipation to Tunisian women unheralded throughout the Arab world. Indeed, as Hawker points out, it gave Tunisian women more legal freedom than many of their Western counterparts, including the British (until the Sex Discrimination Act of 1976). However, although this Bill, along with other legislative moves, such as the instigation of the family planning programme 1966 and its reorganisation into the ONPFP in 1976, have in theory created an environment for the emancipation of women, it cannot be automatically assumed that such changes have been brought about. Despite the fact that many women now go out to work and that the extended family structure is now declining giving greater responsibility to the women of a family, as many writers have shown, the corresponding changes in the actual role played by women in rural society has not been so dramatic (Abu Zahra 1972, Durrani 1975, Hawker 1976, Nassif 1978).

That women are still closeted in the house and rarely allowed out 'unwrapped' in their safsaris, was very noticeable in the five villages studied. Even in the factories, where female labour dominated, there was a noticeable sexual segregation of workers; and women rarely travelled 'unwrapped' from home to factory. The continued protection and seclusion of women in the villages is further emphasised when it is recalled that the author was able to interview only 35 women, and then only

in the presence of a female interpreter.

The economic independence supposedly now available to women does not appear to have been taken full advantage of by the women themselves (as pointed out in the employment section above). Despite all the attempts made so far at engineering social change for women, there is no doubt that a woman's role in the villages of the Sahel is inferior to that of man. Conservatism still focuses on the women. The main objective of Tunisian girls is still to get married and have a family. If a job helps in this respect by increasing her dowry, all well and good, but few Tunisian girls see their work as a career, it is just a job to be given up as soon as possible. However, the social attitudes that are the basis to these views are deep-rooted and will need a great deal of time to change. The attitude of the Tunisian government towards women and their status has been correct; it has created the environment for female emancipation, now time must allow women to gradually adapt to it.

7.11 Education

The importance of education influencing development at the village level was demonstrated on several issues discussed above. It is therefore worth investigating the number of people who have in fact taken advantage of new education opportunities. Overall, 80.5% of the respondents had been through some form of education (table 7.33) and there is little variation around this figure between the five villages. When this is broken down by sex, however, it will be noted that there is a definite bias towards the men (table 7.34).

Whereas 85.4% of the men had had some form of education, only 58.3% of the women had. It was, however, the older women who had not had any education at all. The proportion of people

Table 7.33 Education Characteristics of Respondents by Village

Village (%)

	Maatmar	Mesjed Aissa	Menzel Khir	Sidi Bou Othman	Oued Zibs	Total
Attended School						
Yes	82	86	78	76.7	75	80.5
No	16	14	22	23.3	25	19
n/a	2	-	-	-	-	0.5
Level of Education						
Primary	36	34	38	33.3	35	33
Secondary	30	12	22	36.7	5	22
University	4	6	4	-	-	3.5
Vocational Training	8	2	2	-	-	5
Koranic School	4	32	20	6.7	35	18.5
Other	2	14	-	-	-	0.5
n/a	16	-	2	23.3	25	19.5
Read						
Yes	82	82	74	76.7	70	78
No	18	18	26	23.3	30	22
Write						
Yes	82	82	74	76.7	70	78
No	18	18	26	23.3	30	22
Speak French						
Yes	68	32	34	46.7	25	43
No	32	68	66	53.3	75	57

Table 7.34 Sex Bias of Education Amongst Respondents

%

	Educated	Male	Female
School	Yes	85.4	58.3
	No	14.0	41.7
	n/a	0.6	-
		100	100

who went to school is inevitably very closely reflected in the proportion of people able to read and write (table 7.33). What is more informative, however, are the relative proportions who achieved different levels of education.

Overall, 33% of respondents only had a primary education background; 22% had continued to secondary education and only 3.5% had reached university. In addition, 18.5% (men of the older age groups) had been to Koranic schools. It is thus evident that despite the relatively high proportion of respondents with an education background, only a small proportion had gone beyond primary school. This differential is particularly marked amongst the women (table 7.35).

Table 7.35 Level of Education Background of Respondents By Sex

(%)

Level of Education	Sex		
	Male	Female	
Primary	35.7	76.2	
Secondary	28.6	19.0	
University	5.0	0	
Vocational Training	3.6	4.8	
Koranic School	26.4	0	
Other	0.7	0	
	100	100	
(absolute)	(140)	(21)	(161)

It is thus apparent that education certainly has reached the grass roots level of Tunisian society. Not everyone, however, yet appears to want to take full advantage of it. Girls in particular seem not to make maximum use of the schools

7.12 Respondents' Attitudes to Change

The following presents a discussion of the responses to questions relating to respondents' opinions on change as they themselves saw it in the village. The objective is to assess

Table 7.36 Important Changes

Category	Response	Village					
		Maatmar	Mesjed Aissa	Menzel Khir	Sidi Bou Othman	Oued Zibs	Total
General:	None	2	-	-	-	1	3
	Everything	1	6	2	-	-	9
Village:	Village cleaner	1	2	-	-	-	3
General:	Village revitalized	-	-	-	1	-	1
Public	Maison du peuple	6	13	21	5	-	45
Buildings:	Mosque	2	3	23	-	-	28
	Dispensary	1	15	29	11	-	56
	School	3	9	3	5	-	20
	P.O.	-	3	-	-	-	3
	Nursery school	-	-	-	1	-	1
Services:	Electrification	6	20	13	26	7	72
(Public)	Water	5	20	10	23	6	64
	General services	1	-	-	2	-	3
	Telephone	1	2	1	3	-	7
	Bus service	1	3	-	3	-	7
	Transport	-	5	-	1	-	6
	New pistes	-	1	-	-	-	1
	Roads	-	15	13	11	6	45
(Private)	Hammam	21	-	-	-	-	21
	Café	6	-	-	-	-	6
	Increase No. of shops	3	-	-	-	-	3
Housing	Housing	29	26	14	8	17	94
	New buildings	4	4	6	7	-	21
	Gvt. logements	1	2	1	2	-	7
Social:							
People:	People more cultured	7	7	3	7	-	24
	Mentality of people	2	-	-	-	-	2
	Regime sociale	1	-	-	-	-	1
	Behaviour of people	-	1	-	-	-	1
	Role of women	-	-	1	-	-	1
Living							
Standards:	Better living standards	5	5	4	-	3	17
	Clothing	1	2	-	1	-	4
	Better cooking methods	1	1	-	-	-	2
	More food available	-	-	1	-	-	1
Economic:							
Jobs &	Jobs for young	2	-	-	-	-	2
Activities:	More econ. activities	1	-	-	-	-	1
	Chicken factory	3	-	-	-	-	3
	Tapis factory	-	7	11	-	-	18
Agric:	Agriculture	1	-	-	-	-	1
	Olive press	1	-	-	-	-	1
	Agric. not as dominant	1	-	-	-	-	1
	Improved agriculture	-	-	1	-	-	1
	Agric. deteriorated	-	-	-	-	1	1
Political:	Municipality	1	-	-	-	-	1
	Village organization	-	1	-	-	-	1
	Omda	-	-	-	2	-	2
Miscellaneous:	Caserne	-	2	-	-	-	2

Table 7.37 Problems

Category	Response	Village					
		Meatmar	Mesjed Aissa	Menzel Khir	Sidi Bou Othman	Oued Zibs	Total
General:	None	3	11	6	6	-	26
	Nothing is good	3	-	2	-	-	5
	Everything is problem	-	-	-	-	5	5
Village:							
General:	Dirty village	20	15	16	14	-	65
	Drainage	15	25	10	12	-	62
	Cactus	-	1	-	-	-	1
	Too small.	1	-	-	-	-	1
	Narrow streets	13	7	4	4	4	32
Public Buildings:	Dispensary	2	-	1	-	2	5
	Medical Services	-	1	-	-	2	3
	No communal centre (maison du peuple)	-	2	-	-	1	4
	No nursery school	1	-	-	-	-	1
	No school	-	-	-	-	4	4
	School inadequate	-	-	1	-	-	1
	No P.O.	-	-	-	1	-	1
	No mosque	-	-	-	-	4	4
Public Services:	Bus and Transport	9	4	8	1	3	25
	Electricity	1	2	-	-	6	9
	No telephone	-	1	-	1	-	2
	Public water point	-	-	1	-	-	1
	Water supply	-	-	-	-	7	7
	Street lights	-	1	-	-	-	1
Private Services:	Lack of good shops	3	4	6	2	-	15
	No baker	1	-	-	-	-	1
	No café	-	4	-	-	-	4
	No market	-	4	-	-	-	4
	Nothing to do in village	7	3	3	-	-	13
Housing:	Housing	3	-	1	4	6	14
	Logements not good	-	-	2	1	-	3
Social:	The people (not cult.)	-	-	3	1	-	4
	Life hasn't progressed much	-	1	-	-	-	1
	Poor living standards	-	-	3	-	-	3
	Exodus of rural people	-	-	1	-	-	1
Economic:	No jobs for young	-	-	1	-	-	1
	Lack of emplyt. opp.	-	1	13	6	3	23
	Water for agriculture	-	2	-	-	-	2
	Agricultural pistes	-	1	-	-	-	1
	Machines for land	-	-	1	-	-	1
Political:	Conflict in municipality	7	-	-	-	-	7
	Nothing from governorate	-	1	-	-	3	4
	Les responsables	-	-	1	-	-	1
Miscellaneous:	Caserne	-	1	-	-	-	1

Table 7.38 'Good Things'

Category	Response	Village					
		Maatmar	Mesjed Aissa	Menzel Khir	Sidi Bou Othman	Oued Zibs	Total
General:	Nothing	6	2	7	1	15	31
	Everything	2	5	2	12	-	21
	Everything improved	-	1	-	1	-	2
Village:	Weather	8	4	3	1	-	16
General:	Quiet	23	13	14	10	3	63
	Fresh Air	14	8	5	-	-	27
	No pollution	2	5	-	1	-	8
	Situation	5	7	-	2	-	14
	Calm, peaceful	2	2	1	1	-	6
	Countryside	1	-	-	-	-	1
	The view	-	1	-	-	-	1
	Unspoilt environment	-	1	-	-	-	1
	Freedom	-	1	1	1	-	3
	Cheaper	-	-	3	1	-	4
	Life better than towns	-	-	1	-	-	1
	Village is cleaner	-	-	1	-	-	1
Public buildings:	School	1	7	3	3	-	14
	Mosque	-	6	12	-	-	18
	Medical services	-	6	5	5	-	16
	Maison des jeunes/ du peuple	-	6	7	1	-	14
Services (public)	Water	1	2	4	5	-	12
	Electricity	1	2	5	5	-	12
	Roads	-	-	1	1	1	3
	Cars	-	-	1	-	-	1
	Telephone	-	-	1	-	-	1
	Buses	-	-	1	2	-	3
(private)	Hammam	1	-	-	-	-	1
Housing:	Housing	1	3	1	2	1	8
	Logements	-	-	-	2	-	2
Social:	People	12	1	1	1	-	15
	People respect each other	-	2	1	-	-	3
	Community spirit	-	3	1	-	-	4
	People help each other	2	2	-	-	-	4
	The family	-	1	-	-	-	1
	Everyone more educated	-	1	-	-	-	1
	Living standards improved	-	1	-	-	-	1
	Everyone has radio	-	1	-	-	-	1
	Fresh food available	-	-	2	-	-	2
Economic:	Everyone works	-	1	-	-	-	1
	Carpet factory	-	2	2	-	-	4
	Agriculture	-	-	1	-	-	1

Table 7.39 Improvements

Category	Response	Village					
		Maatmar	Mesjed Aissa	Menzel Khir	Sidi Bou Othman	Oued Zibs	Total
General:	None	1	-	3	1	-	5
	Everything	2	-	2	-	-	4
	Many things	1	-	-	-	-	1
Village:							
General:	Increase size of village	2	-	2	1	-	5
	Clean village	2	1	1	1	-	5
	Improve drainage	1	2	-	1	1	4
	Improve cemetery	-	2	-	-	-	2
(public buildings)	Dispensary	4	1	-	-	14	19
	Mosque	8	-	1	10	17	36
	Maison du peuple	4	1	-	-	3	8
	P.O.	1	6	-	-	-	7
	Nursery school	3	3	1	-	1	8
	Secondary school	5	5	5	1	-	16
	A school	-	-	-	-	15	15
	Police station	-	1	1	-	-	2
(services public)	Roads and transport	13	3	3	3	2	24
	Electricity	1	-	1	-	1	3
	Water	-	-	1	-	-	1
(Services private)	New shops	9	10	1	-	-	20
	Baker	8	6	-	3	-	17
	Carpenter	1	-	-	-	-	1
	Hairdresser	2	5	-	-	-	7
	Butcher	1	-	-	-	-	1
	Café	5	25	3	4	-	37
	Cinema/Entertainments	5	6	2	-	1	14
	Sports facilities	1	2	2	-	-	5
	Bar	-	-	1	-	-	1
	Market	7	9	1	1	-	18
	Hammam	-	23	6	9	-	38
	Mill for wheat	-	1	-	-	-	1
(housing)	More housing	5	2	16	5	3	31
	More logements	-	1	1	3	-	5
	More government aid for housing	-	-	2	-	-	2
Social:	Improved Living standards	-	-	3	-	-	3
	New husband	1	-	-	-	-	1
	New wife	-	1	-	-	-	1
	Bring back migrants	-	-	3	-	-	3
Economic	Factory	23	9	16	15	3	66
	Improved number of jobs	2	-	4	-	-	6
	Improved water for agriculture	-	2	1	2	-	5
Political:	Power of municipality	1	-	-	-	-	1
	Efficiency of government works	-	-	2	-	-	2

what they saw as the most important changes that have taken place in the village, what they believe to be the main problems that exist there, what the 'good' things of the village are and, finally, what kind of improvements they would like to see in the future. In analysing these responses one is really examining the grass-roots response to the rural development programme.

Questions relating to respondents' perceptions of the most important changes, problems, good things and improvements for the future in their own village were all presented as open questions. Consequently, responses varied from a complete lack of response to a long list of items. These have been clustered into common groupings and are presented in tables 7.36 - 7.39.

Overall, virtually all the respondents recognised that there has been some degree of change in their village, and again, virtually all believed the change to be for the better. (tables 7.40, 7.41).

Table 7.40 Proportion of Respondents Who Believed that there Had been some Change in the Village

(%)

	Maatmar	Mesjed Aissa	Menzel Khir	Sidi Bou Othman	Oued Zibs	Total
Yes	90	98	100	100	95.0	96.5
No	8	2	0	0	5.0	3.0
n/a	2	-	-	-	-	0.5
	100	100	100	100	100	100

Table 7.41 In What Direction Respondents Believed Change to Have Taken Place in Their Village

(%)

	Ma	M.A.	M.K.	S.B.O.	O.Z.	Total
Better	88	94	100	100	80	45.5
Same	10	6	-	-	15	5.5
Worse	0	0	-	-	5	0.5
n/a	2	-	-	-	-	0.5
	100	100	100	100	100	100

Analysis of the more specific responses reveals, however, that there are differences between villages as to what have been identified as the main changes and where changes in the future need to be directed.

7.12.1 Important Changes (table 7.36)

Inevitably, when presented with open-ended questions, some respondents will reply with vague and general answers. Occasionally, these can in themselves be revealing, but in the case of important changes this is not particularly the case. However, of the nine people who replied that everything had changed, it is significant that six were from Mesjed Aissa - the village that has been shown to have benefitted most from development.

The most significant area of change identified by all respondents relates to public buildings and services. A total of 358 responses were given, listing some items of public investment as being one of the major changes noted in the village. In particular, the provision of electricity (72 responses), water (64), health facilities (56) maison du peuple (45) and road improvements (45) were mentioned as the most important changes, all of which have been instigated as a direct result of the PDR. There is, however, a marked lack of these responses in certain villages. Hardly anyone from Oued Zibs noted any changes in these features (basically because none of them have been fully instigated in the village). Most respondents noting public services as being amongst the major changes in the village were from Mesjed Aissa and Sidi Bou Othman, whereas most of the respondents noting public buildings as being amongst the most important changes were again from Mesjed Aissa, but also from Menzel Khir. The people of Mesjed Aissa are thus fully recognizant of the benefits that have accrued to their village from the public authorities. It is

significant, though, that few people of Maatmar see the public buildings and services as being amongst the most important changes, despite the fact that virtually all are now available to them. This almost certainly reflects the resentment felt in Maatmar towards Sahline where most of the public buildings services are located. It was however only the peeple of Maatmar who listed private services (shops, hammam and café) as being amongst the important changes in the village.

Reinforcing the points noted in the above discussion is an analysis of the responses to people's attitudes to specific services. Respondents were asked to state their opinion on the water, electricity, roads, bus service, medical services and drainage in each village (table 7.42).

Water, electricity, roads and medical services all came out favourably, except in the village of Oued Zibs which has none of these services. Peoples' opinion on the bus network varied but, on the whole, people's attitude to it was that it was fair, except in the villages of Maatmar, which has a very poor and infrequent service, and Oued Zibs, which has no buses at all. Drainage, predictably, came out very badly - 93.0% of respondents overall thought that it was inadequate.

Housing improvements, both private and government-sponsored were prominent in all five villages amongst the important changes noted by respondents. A total of 122 people mentioned housing improvements, with roughly equal proportions of total respondents mentioning it in each village. The one exception was Sidi Bou Othman, where only 8 people suggested housing, but the low quality housing of Sidi Bou Othman described above will be recalled.

An examination of people's opinion of housing reveals

Table 7.42 Respondents' Attitude to Village Services
(%)

Service							
1. Water	Good	86	96	78	93.3	-	79
	Inbetween	12	4	18	6.7	-	9.5
	Bad	2	0	4	-	100	11.5
2. Electricity	Good	90	80	64	96.7	-	73
	Inbetween	10	14	32	-	10	15
	Bad	0	6	4	3.3	90	12
3. Roads	Good	10	66	50	40	-	37.5
	Inbetween	44	22	42	56.7	45	40
	Bad	44	12	8	3.3	55	22
4. Bus Service	Good	8	30	16	70	-	24
	Inbetween	20	44	46	26.7	-	31.5
	Bad	70	24	38	3.3	100	43.5
	n/a	2	2				1.0
5. Medical Services	Good	24	34	62	76.7	-	41.5
	Inbetween	14	34	20	16.7	15	21.0
	Bad	56	32	16	6.7	85	35.5
	n/a	6		2			2.0
6. Drainage	Good	2	-	2	3.3	-	1.5
	Inbetween	8	4	6	3.3	5	5.5
	Bad	90	96	92	93.3	95	93.0

a similar pattern, although the emphasis tends to be toward people suggesting that housing was 'inbetween'. Few people actually said that housing was bad (8.5%) (table 7.43).

Table 7.43 Respondent Attitude to Housing (%)

	Village					
	Maatmar	Mesjed Aissa	Menzel Khir	Sidi Bou Othman	Oued Zibs	Total
Good	24	46	12	30	-	25
In between	72	54	74	63.3	70	66.5
Bad	4	-	14	6.7	30	8.5
	100	100	100	100	100	100

A surprisingly low number of respondents noted changes in the social environment of their village. A total of 24 suggested that people were, on the whole, more cultured/educated, (none of these came from Oued Zibs) and 17 people thought that general living standards had improved. Individual respondents also mentioned aspects such as changes in the mentality of people, in the 'régime sociale' and in the general behaviour of people, but overall, the proportion is not significant. This is reflected to a certain degree by the fact that 65% of respondents believed living standards to be only average. Only 24% thought them to be good, but an even smaller proportion (9.0%) suggested that they were actually bad (Table 7.44).

Table 7.44 Respondent Opinion of Current Village Living Standards

	Village (%)					
	Maatmar	Mesjed Aissa	Menzel Khir	Sidi Bou Othman	Oued Zibs	Total
Good	18	36	20	30	15	24.5
In between	78	54	66	70	50	65.0
Bad	2	10	14	-	25	9.0
n/a	2	-	-	-	10	1.5

The lack of change in the social environment noted by respondents reinforces the view proposed above that really, although social mobility has increased and women now have the potential to play a greater role in rural society, the basic structure of that society in the Sahel has in fact changed very little.

Less surprising is the fact that few respondents mentioned any change in the economic environment, and none did in either Sidi Bou Othman or in Oued Zibs. Basically, those that did make comments in this area were indicating the limited new employment opportunities in the villages - the chicken factory in Maatmar, and the carpet factories in Mesjed Aissa and Menzel Khir. This is strongly indicative of the PDR's failure to carry out one of its objectives - the creation and consolidation of employment at village level in the governorate, a phenomenon strongly reflected in the following table:(table 7.45).

Table 7.45 Respondent Opinion of Employment Opportunities (%)

	Village					
	Maatmar	Mesjed Aissa	Menzel Khir	Sidi Bou Othman	Oued Zibs	Total
Good	18	44	6	20	-	20
In between	28	40	34	56.7	-	34
Bad	46	14	56	23.3	90	41.5
	8	2	4	-	10	4.5
	100	100	100	100	100	100

The majority of respondents (41.5%) saw employment opportunities in the villages as being bad. This was particularly emphasised in Oued Zibs and Menzel Khir. In Sidi Bou Othman, on the other hand, a surprisingly low 23.3% of respondents suggested that employment opportunities were bad.

Finally, a small number of people did refer to changes in the politics of the area. Although only one person mentioned it, it is worth noting that the presence of the municipality in Maatmar has been seen as a major change - as has the presence of the omda in Sidi Bou Othman.

To conclude on people's perception of change at the village level, it will be noted that not one response recorded a negative change, one that was not seen as a gain to the village. Thus, despite inbalances in the changes and confused priorities, on the whole the changes that have occured at village level would seem to be in a positive direction.

7.12.2 'Good Things' in the Village (table 7.37).

Despite all the changes that have taken place, 75% of the people interviewed in Oued Zibs were still able to say that they felt that there was nothing good in their village. Throughout the preceding discussion, however, it has been made very clear that Oued Zibs has been by-passed by the development process; few benefits have accrued there. Although a number of people in the other villages were also able to say that they felt there was nothing good about their village, these were very much in the minority and were almost completely balanced by those who felt that everything was good.

The most striking aspect of the responses to the question relating to the 'good' things of the village, is the large number of people who, particularly in Maatmar and Mesjed Aissa, referred to things like the air, its calm and quiet, the village situation, the peace of the village, its unspoilt environment and the freedom of village life. In all, 146 responses were made along these lines. It will be recalled that one of the major conclusions of the discussion relating to employment structures and physical and social mobility at village level

was the reversal of rural to urban migration and the trend for people to return to the village or to remain in it and use it as a commuter base. The preponderance of responses relating to the calm and peaceful nature of the village as being its chief asset reinforces this conclusion. That rural areas are beginning to be more attractive places of residence than urban areas is very apparent.

Although many respondents listed public buildings and services as being amongst the most important changes to have taken place in the village, not as many listed these same items as being amongst the good things of the village. Certainly responses along these lines in Maatmar and Oued Zibs were minimal, which reflects the paucity of such items in these villages, but even in Maatmar and Sidi Bou Othman where the items are more established, relatively few positively mentioned them. However, this is not interpreted as being an implicit statement against these services, rather that it is assumed to be a villager's right to such things - 'once they are there, all well and good, but so they should be', would appear to be the attitude. Hence, the presence of dispensaries, mosques and maisonsdu peuple is simply accepted and not noted as being anything particularly good. This attitude would appear to be particularly true also of services such as water and electricity. In Maatmar and Mesjed Aissa in particular, it would appear that these are now taken for granted.

As with 'changes', few people mentioned aspects of the social environment as being positively good. However, the few items that were stated reinforce the point made relating to the appeal of villages- ie that in the village there is a good community spirit, that people respect each other, and that families are 'good' things.

Substantiating the weaknesses of the economic aspects

of the PDR, it can be noted that just 6 people made any reference to employment or economic activities as being good aspects of the village, and 4 of these referred to the employment opportunities of the carpet factories in Mesjed Aissa and Menzel Khir.

In many ways, asking people to list the things that they felt were good about the village after the question on what they saw as the most important changes must inevitably have led some people to see the two questions as driving at the same thing. Accordingly, one must allow for the fact that many people who thought of a change as good would have mentioned the item in the first question and not the second. Despite this problem, analysis of responses to the 'good' question has nevertheless been worthwhile in that it has further strengthened the argument relating to the increasing appeal of villages and rural life.

7.12.3 Problems (table 7.38)

Naturally, not all things in the villages are as their residents would wish. An attempt to investigate the main problems as seen by villagers was made through the question 'what do you see as the main problems in the village'. Again, there are a number of people making generalisations; 26 people said that there were no problems - significantly, 11 of these came from Mesjed Aissa; 5 that nothing is good, and 5 that everything is a problem. All of the latter were interviewed in Oued Zibs.

The two problems identified by the highest number of people are the dirty nature of the village and the lack of drainage. These two particular problems were highlighted in the discussion of the village environment, and it is hardly surprising that a total of 127 people identified these problems.

That no one from Oued Zibs suggested dirt and drainage as problems is probably due to the smallness of the village. Waste accumulation in Oued Zibs was nowhere near as bad as in other villages.

A subject nominated as a problem in each village, with 32 nominees, was that of narrow streets. What people were getting at here is very difficult to see. Why narrow streets should be a problem in a rural village with very little traffic of any kind - animal, pedestrian or motorised - is difficult to envisage. The only possible significance is that it may represent peoples feeling of some kind of claustrophobia - although this argument is not very sound when considered in the light of peoples comments on the good things of the village.

In the discussion of the village environment, absences of certain services and facilities in each of the villages were noted. This is reflected in problems related to village services, public and private, suggested by respondents. People in Maatmar and Oued Zibs, for example, see the lack of a dispensary as a problem; similarly, inhabitants of Oued Zibs note the lack of a school or mosque of any kind. It would appear that inhabitants of each of the villages consider their bus service to be inadequate, particularly in Maatmar. In the previous Chapter the infrequent service to Maatmar was highlighted. Inevitably, the electricity and water supply to Oued Zibs is listed as a problem in that village and it would appear that not everyone is totally satisfied with these services in other villages either. In Menzel Khir, for example, the public water point was criticised. Finally, in relation to village services, the lack of decent village shops, noted above, was also pointed out by respondents in each of the villages except Oued Zibs. Residents of Mesjed Aissa also suggested that the lack of a market in their village was also a problem.

In all the villages except Mesjed Aissa housing was still seen as something of a problem by some residents. Although considerable housing development and improvement in the villages has been noted, not all people have yet benefitted, and it is thus inevitable that some persons will still be dissatisfied with their housing. In Menzel Khir and Sidi Bou Othman the government logements were also criticised, albeit by a small number of people (3).

Few people (9 in all) identified any problems associated with the social environment. In view of comments made relating to important changes and good things, this is hardly surprising. The fact that 3 people (all in Menzel Khir) were still able to say that living standards are still a problem perhaps suggests that improvements in living conditions have not yet reached the aspired heights of some people. However, as only 3 people mentioned this as a problem, it cannot be discerned as significant.

Lack of employment opportunities was seen as a problem by a relatively large number of people (23), particularly in Menzel Khir. This is yet another piece of evidence in support of the argument that PDR attempts to create and consolidate employment in rural areas are not being as successful as they might be.

Finally, it is interesting to note that seven people in Maatmar registered conflict with the municipality as one of the problems. Difficulties with the municipality and the treatment of Maatmar as the poor relation of the three settlements of the commune has been mentioned several times. This response serves to substantiate the argument. Also on a political note, it is worth noting that people in Oued Zibs regard the fact that the village received nothing from the governorate as a problem; despite all the difficulties, this

would suggest that the villagers continue to regard it as their right to look to the governorate authorities for help.

7.12.4 Future Improvements (table 7.39)

In many ways, the improvements listed by respondents that they would like to see in the near future in the village are based on the problems discussed above. Four main areas where improvements are desired by residents can be discerned: public buildings, private services, housing and jobs.

In villages where certain public buildings are absent, respondents have invariably suggested that their construction is one of the improvements that they would like to see. In Maatmar, a long list of buildings is presented - dispensary, mosque, maison du peuple, Post Office, nursery school and secondary school. In Oued Zibs, residents are more specific - a dispensary, a mosque and a school are their requirements. In all villages, however, there appears to be a marked desire for improvements in roads and transport.

In Maatmar and Mesjed Aissa, the two villages most urban oriented, people suggested a wide range of private services that they would like to see provided, ranging from baker and butcher to hairdresser, even to a cinema and bar. Obviously some of these would be unrealistic to expect, but nevertheless, that such basics as butcher/baker and even market (for fresh food) were mentioned should suggest to the development planners that some incentives for these services should be provided. That the list of requirements is more restricted in Menzel Khir, Sidi Bou Othman and Oued Zibs reflects two things; the fact that these villages are still struggling for many basics and are more concerned for these than for 'extras' such as sports facilities and cinemas; also, that these 3 villages are much more rural than Maatmar and

Mesjed Aissa and have fewer aspirations to the services that the villagers from Maatmar and Mesjed Aissa come across much more regularly.

Requests for improvements in housing came from residents in each village, particularly Menzel Khir. Five people also suggested that more government logements would be desirable.

Finally, it will be noted that a total of 72 people stated that more jobs need to be made available. Bearing in mind comments previously made, this is not surprising.

Opinions of the residents from Maatmar, Mesjed Aissa, Menzel Khir, Sidi Bou Othman and Oued Zibs thus tend to reinforce arguments and statements made by the author regarding the impact of rural development at village level. Before concluding the Chapter, though, one last set of responses can be cited - those given in reply to questions relating to whether an occupant, if given the chance, would prefer to live elsewhere. Nearly three-quarters of the residents said that they would prefer to remain where they were (table 7.46).

Table 7.46 Proportion of Residents Who Would Prefer to Live Elsewhere if Given the Opportunity.

	Village (%)					
	Maatmar	Mesjed Aissa	Menzel Khir	Sidi Bou Othman	Oued Zibs	Total
Yes	28	8	50	16.7	20	26
No	10	90	48	76.7	80	71.5
n/a	2	2	2	6.7	-	2.5
	100	100	100	100	100	100

Even in Oued Zibs, the poorest and least well served village of the five, 80% wished to stay. It was only in Menzel Khir that a relatively high proportion (50%) indicated a desire to

move. This, surely more than anything else, substantiates the view that the rural areas of this part of the Sahel are no longer areas to be evacuated. Rather, they are places where people, given other options, would still prefer to live. It is not unreasonable either to suggest that the policies of the PDR, despite its weaknesses, have gone some way to bringing this situation about.

7.13 Conclusion

Comments made by respondents on their perception of change thus reinforce conclusions drawn throughout the discussions. Without a doubt the five villages studied have, in recent years, become more attractive places in which to live than they were previously. Many people are now seeing the village as a desirable place in which to live, preferring to reside there and commute to the town. Part of this is due to the increasing undesirability of town life, but primarily due to improvements in the village environment. The PDR has certainly contributed substantially to making the village a better place in which to reside, with improvements in accessibility, service provision and living standards. Despite this, many mistakes have been made by the PDR and, in several instances, resource allocation priorities have been misplaced. Changes in the economic structure of the villages themselves have been minimal; little or no diversification of the rural economy has taken place and non-modernised agriculture remains the economic foundation. Problems that this may have induced have, to a certain extent, been surmounted through the increase in commuting, but there will be a need in the future for the PDR, with the API, to make greater efforts to encourage rural industrial and agricultural investment. Similarly, changes in the social structure of the villages are not substantial,

although the decline of the extended families in favour of the nucleated one can be noted.

Thus, although there have been few fundamental changes in the villages studied, a gradual process of transition, of adaptation to a process of national modernisation can be noted. Much of this has been lubricated by the PDR, but stimulated by changes which are outside the rural environment and which are more a feature of national development.

CHAPTER EIGHT

ASSESSMENT OF AGRICULTURAL DEVELOPMENT : MONASTIR GOVERNORATE

8.1 Introduction

Agriculture is the mainstay of the rural economy in Monastir. Naturally it represents the sector in which rural development effort is most concentrated. In the light of this, and the significance of agricultural development to overall socio-economic development (Kotter 1974), it is necessary to make a close investigation of the impact of rural development policies on the agricultural sector.

Part of the questionnaire survey carried out in the five villages of Ouardenine delegation included questions put to respondents who were farmers, both full- and part-time (Appendix II). Responses to these, supported by data published at the governorate level, form the basis for the first part of this chapter. Using this information, an analysis is made of land tenure arrangements, labour requirements, income from the land, production systems and market and credit facilities in the region. in order to assess the changes and developments resulting from the rural development programme. Farmers' reactions to the changes are then presented and examined.

Much of the emphasis in agricultural development in Tunisia is on the realisation of the country's irrigable potential. The second part of the chapter examines the Sahline <u>périmètre irrigué</u> (p.i) of the Nebhana project administered by OMIVAN. Using both official published data and the results of a small questionnaire survey carried out amongst farmers on the p.i, (Appendix III), the success and impact of the development of such areas is assessed. Particular attention is

paid to the benefits, or otherwise, that the scheme brings to the local area. In so doing, this section presents a critical study of one of the key elements of Tunisia's agricultural development philosophy.

8.2 Impact of Agricultural Development at the Village Level.

The questionnaire survey, the results of which form the basis for this section, was simply an extension to that outlined in the previous chapter. If any respondent declared his occupation to be one directly relating to agriculture, then the additional questions were put to him. In all, 66 farmers were interviewed in this way (table 8.1).

Table 8.1 Number of Farmers Interviewed in Each Village

Maatmar	15
Mesjed Aissa	14
Menzel Khir	14
Sidi Bou Othman	17
Oued Zibs	6
Total	66

All the farmers interviewed owned their own land. General conversation with them and other villagers intimated that this situation was general. Share-cropping and renting are virtually non-existent in the area (with the exception of the p.i's). Average area of land farmed per owner was 5.5ha (table 8.2). Mean area was exceeded considerably in Sidi Bou Othman (18.8ha). This was due to the fact that two of the farmers interviewed in the village both claimed to own plots of 50ha. In the context of the land ownership throughout the Sahel, such figures would appear to be an exaggeration on their part. A mean area owned of approximately 5 ha, however, does tie in with the regional pattern.

Not only was the mean area of land owned small, but in many cases plots were fragmented. Many farmers complained of the fact that there was no cohesion to their land and that this made it very difficult to farm efficiently. What appeared to be overlooked, though, was that in many cases the situation had arisen through their own, or their family's fault.

The need for land reform is reinforced by the fact that many of the landowners do not directly farm the land themselves. Nearly 60% of those interviewed employed permanent labour throughout the year. Although a proportion of these still worked on the land themselves, many did not, preferring to oversee the work of the labourers whilst they were employed in more lucrative jobs elsewhere. Just over 40%, however, did directly work their own land (table 8.3).

Table 8.2 Mean Area of Land Farmed, per Farmer

	(ha)
Maatmar	4.37
Mesjed Aissa	6.75
Menzel Khir	5.33
Sidi Bou Othman	18.8
Oued Zibs	7.0
Total	5.55

Table 8.3 Number of Respondents Employing Permanent Farm Labourers

No. of workers employed	Maatmaar	Mesjed Aissa	Menzel Khir	Sidi Bou Othman	Oued Zibs	Total	%
0	4	7	5	8	4	28	42
1	7	4	6	4	2	23	35
2	3	1	3	5	-	12	18
3	1	2	-	-	-	3	5

Permanent labour requirements per farm are low. Of the 38 land

owners employing such labour, 23 (60%) employed just one worker. This reflects both the small farm size and the production system based, as it is, on olives. Olive farming does, however, entail a high rate of seasonal employment (table 8.4).

Table 8.4 Landowners Employing Seasonal Labour

Number of seasonal workers	Maatmaar	Mesjed Aissa	Menzel Khir	Sidi Bou Othman	Oued Zibs	Total
0	1	-	2	1	-	12
1	-	4	3	1	3	11
2	1	2	4	1	2	10
3	4	4	1	4	-	13
4	5	2	1	1	-	9
5	2	-	1	1	-	4
6	-	-	1	2	-	3
7	-	-	-	1	-	1
8	-	-	1	-	-	1
9	-	1	-	-	-	1
10	-	-	-	1	-	1
n/a	2	1	-	4	1	8

Over 50% of the landowners employed between 1 and 3 labourers in the harvest season (2 months - November to January). Direct employment resulting from agricultural activity in the area is therefore low, and much of what there is is highly seasonal.

Income from agriculture in the region is low. Labourers receive between 1.7 and 2.0 Dinars a day, plus food, thus conforming with the S.M.A.G. Nowhere, even on the one or two more productive farms, were landowners to be found who were prepared to pay much above the minimum rates; 2TD was the absolute top rate for agricultural labour, and only 5%

of those interviewed paid as much as this. Incomes from production were also low (table 8.5).

Table 8.5 Annual Income From the Land

Dinars	Maatmar	Mesjed Aissa	Menzel Khir	Sidi Bou Othman	Oued Zibs	Total
0	-	1	-	3	-	4
200	4	5	5	6	4	24
200-500	6	3	4	2	2	17
500-1000	3	3	1	3	-	10
100-1500	-	-	-	3	-	3
1500-2000	-	1	-	-	-	1
2000	1	-	-	-	-	1
n/a	1	1	4	-	-	6
	15	14	14	17	6	66

Over two-thirds of the respondents earned less than 500TD per annum from their land, and only 5 earned more than 1000TD. Such low incomes are not too serious, given that the majority of landowners use their land to supplement incomes gained from other sources of employment. Nevertheless, they are indicative of the fact that the land is not yielding as lucratively as it might. It must also be remembered that, because of the small-scale of many of the agricultural operations, much of what is produced is consumed by the farmer himself and therefore not sold (table 8.6). It is clear from the table that all landowners consumed some of their own produce. Although only 5 of the 66 consumed all that was produced, over 50% of the landowners consumed, on average, more than a quarter of their annual production. Such consumption obviously needs adding to the financial income from the land.

As has been emphasised above, olives are the dominant crop type in the area. All the farmers interviewed grew olives

Table 8.6 Proportion of Produce Consumed by Farmer

Proportion Self Consumed	Maatmar	Mesjed Aissa	Menzel Khir	Sidi Bou Othman	Oued Zibs	Total
¼	7	11	5	6	1	30
¼ - ½	5	2	8	3	-	18
½ - all	1	-	-	1	-	2
all	1	-	-	4	-	5
'enough for self'	-	-	-	3	4	7
n/a	1	1	1	-	1	4

and over the five villages the average number of trees grown per farmer was 340 (table 8.7).

Table 8.7 Number of Olive Trees per Farmer

No. of Trees.	Maatmar	Mesjed Aissa	Menzel Khir	Sidi Bou Othman	Oued Zibs	Total
50	-	1	1	1	-	3
50-100	1	2	2	1	4	10
101-200	3	3	1	3	-	10
201-500	3	4	3	4	2	16
501-1000	2	1	-	1	-	4
1000	1	1	-	-	-	2
n/a	5	2	7	7	-	21
mean	507	393	244	281	166	340

Variation between the villages was substantial, ranging from a mean of 507 in Maatmar to 166 in Oued Zibs. To draw definite conclusions from this is impossible because of the

limited size of the sample. Nevertheless, from field observations it was clear that land in the vicinity of Maatmar/Mesjed Aissa, (the two 'better off' villages), was managed far better than it was around the other three villages. Although this is partly a chicken and egg situation with respect to incomes and efficient management, there would none-the-less appear to be some relationship between the general living standard and village condition and the quality of farming.

Although all farmers interviewed grew olives, 83% also grew other crops. However, arboriculture undoubtedly dominates; 60% of those interviewed grew a range of fruit trees in addition to olives. These included almonds, figs and pomegranites (table 8.8).

Table 8.8 Crops Grown by Respondents

Crop	No. of Respondents					
	Maatmar	Mesjed Aissa	Menzel Khir	Sidi Bou Othman	Oued Zibs	Total
Olives	15	14	14	17	6	66
Other Fruit Trees	5	12	9	11	3	40
Wheat	5	2	8	9	1	25
Culture Maraîchère	1	4	3	2	-	10
Fodder	1	-	-	-	-	1

It would therefore appear that the PDR attempts to initiate diversification of the tree crop base are beginning to take effect. However, attempts being made to reduce the wheat crop do not seem to be as effective. Wheat really is not suited to the area and yields are low. It has been grown in the past because of the self-sufficient orientation of many of the small farms in the area. There is now, however, a real need to encourage farmers to decrease this crop in favour

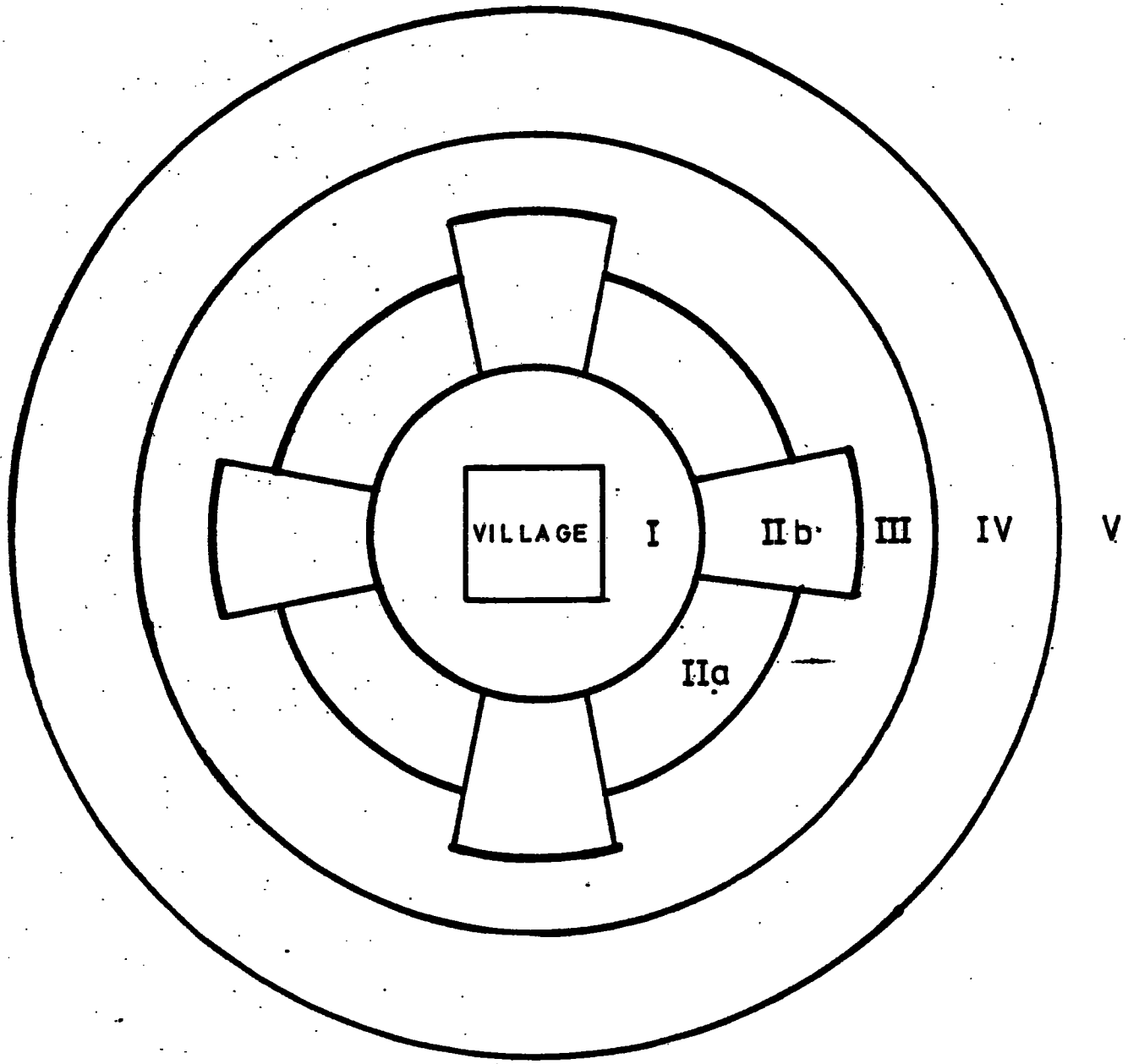
of others. The obvious replacement is fodder crops. Tunisia suffers from a chronic shortage of animal feedstuff. Not only do extensive livestock herds graze the Steppe and Tell of Tunisia, but most farmers have their own small collection of animals. Those of the Sahel are no exception. Of those interviewed, 64% kept animals of some kind. Whilst it is admitted that the numbers were on the whole small, and only included one or two donkeys or mules, a few sheep, possibly the odd cow or horse, and a few chickens, not all of these animals are able to live from browsing rough ground in the villages. Consequently, owners often have to buy animal food. It would surely be logical, therefore, for farmers to grow their own limited supplies of fodder. More effort needs to be exerted in this direction.

It will also be noted from the above table that only a small proportion of the farmers carry out any culture maraîchère this in spite of the massive drive in the region to develop this form of agriculture. This is in part due to shortages of water and unsuitability of land, but it is also due very much to a reluctance on the part of the farmers to break with traditional production systems. There is no doubt that the farmers of the Sahel are extremely conservative. The olive continues to dominate. and, although there has been some diversification of tree crops, its impact would appear to be limited. Considerably more effort is therefore required by the PDR officials if they really wish to see changes in the agricultural production base taking place.

Actual farming practice in the area is also inefficient. Close study of the agriculture in the vicinity of the five villages investigated revealed a marked zonation of land use (figure 8.1). In many ways, the pattern reflects the Von Thunen type model, with a decreasing intensity of land use with

g 8.1

MODEL OF AGRICULTURAL LAND USE



ZONE

I Waste Land

II Small plots, intensively farmed
a fruit trees
b market gardening

III Transition to olives

IV Mature olives

V Ill-kept olives

increasing distance from the village. The crop variety suggested by Von Thunen, however, is not present.

At the heart of the system is the village itself. This is surrounded by an area of waste land. This waste land area appears to act as a kind of buffer between the village and the agricultural land, an expansion zone which allows the village to grow comfortably without directly impinging on the productive area. Although almost completely empty, the zone is scattered with a few relic olive trees and, in a few villages such as Sidi Bou Othman, disused wells. It is an area that was once farmed, but with the growth of the village and over-farming in the past (many of the wells found in this zone are disused due to high salinity rates which are a consequence of over-exploitation), the land has become derelict and used only for the grazing of animals and the dumping of rubbish.

Zone II is that of intensive farming. It is here that the new fruit tree plantations, the plots utilised for wheat production and the cultures maraîchères are found. Land plots are small (average 100-200 sq.m.) and enclosed by thick cactus hedges which themselves average over one metre in thickness. The zone is criss-crossed by many small tracks providing access to the individual plots. Consequently, although what land is farmed is done so intensively, an estimated 35% is lost to other uses. Naturally, there have to be access tracks and boundary fences of some kind, but as the situation stands at present, land use is extremely inefficient. Yet the material aid provided by the PDR and directed at the small farmer is very much concentrated in this zone. In Maatmar, for example, extensive exploitation of a local subterranean water supply has taken place to the east of the village; farmers have been provided with electric motor-pumps for wells, concrete irrigation

channels have been constructed and grants allowed for the development of serres. Similarly, in this zone to the west of Mesjed Aissa, several new plantations of almond and fig trees are to be found.

There are two criticisms of this. Firstly, PDR aid and assistance is being directed at the one zone in the land use system that is already relatively productive. As will be demonstrated below, it is in the other zones, particularly III and V, that farming needs injections of life. It seems to be a waste of resources to try and improve what is already the best agricultural area. Secondly, aid and development is being carried out in an extremely superficial manner. New techniques and developments are simply being grafted on to the original base. There are strong arguments for the development of the indigenious, traditional resource and production base, and there is a need for some degree of adaptation of the original base to the new techniques. One of the prime concerns must be a re-ordering of the land structure, avoiding such large wast age from cactus hedges, banks and tracks. Also, farmers initiating new tree plantations, or incorporating irrigated farming into their land must be both instructed and encouraged in the better maintenance of their land. It was particularly noticeable in Menzel Khir that land utilised for new fruit trees was poorly maintained. Once trees were planted, little attention was given to them and, in certain fields, sheep were even allowed to graze amongst the new saplings - inevitably causing damage to new shoots.

Beyond the small-scale intensive farming zone is a transitional zone (Zone III) leading into the established olive area (zone IV). Zone III is an area dominated by olive trees of varying ages, but predominantly either very old, past peak

productivity, or very young, not yet having reached productive age. It is in this zone, however, that most effort appears to be directed in the improvement of the olive crop. Rejuvenation and replanting in this zone are very much in evidence in all five villages. But again, as with developments in the intensive zone, it would appear that inadequate preparation and maintenance is being devoted to the new trees. Ground preparation in particular is poor. Ploughing is minimal and water retention banks built on the hillsides are in a poor state of repair.

The area of established and most productive olives is zone IV. Here most of the mature trees are found, and it is here that most attention appears to be devoted to their care and maintenance. The ground is well ploughed, water retention banks well maintained and the trees themselves well looked after. This is in marked contrast to the olives of zone V. In this area the trees are widely spaced, old and poorly maintained. Yet it is this area that forms the largest proportion of the olive-producing land of the region - the area between village farming systems. If it is one of the objectives of the PDR to improve olive productivity, then this zone must be the prime target area.

The agricultural production system of the area is thus extremely inefficient and faces many problems. These can be summarised as follows:-

i) land tenure: Much of the land is held in small fragmented plots, average area 5ha. In the majority of cases, the land is not farmed directly by the owner, but by poorly paid workers.

ii) Employment: Labour requirements of the farming system are low, based as it is on olives. There is, however, a high seasonal demand for labour. Given that agriculture is the mainstay of the rural economy, its employment potential,

as it stands at the moment, is not great.

iii) income: income from regional agriculture is low. Direct income from production is, on average, less than 500TD p.a., and average wages paid to agricultural labourers are little, if any, above the statutory minimum.

iv) diversification: policies of diversification of agricultural production have had little effect as yet. Although new fruit tree plantations and a certain amount of culture maraîchère is in evidence, its impact on overall production is minimal. The olive is still by far the dominant crop.

v) production management: in all zones of agricultural land use there is considerable evidence of inefficient farm management. Where changes and innovations have been instituted, they have frequently been superimposed, with little regard for the need to suitably adapt to previous systems. Again, in all areas considerable wast age of land was noted in addition to poor practices of land and crop management, such as ploughing and soil preparation.

8.3 Marketing

As intimated above, not a great proportion of crop production remains for sale; what is left, however, would appear to be marketed very inefficiently. The arrangement for sale of goods is that individual farmers take their own produce to a market for sale. Occasionally, a small number of farmers group together to share a truck in order to carry produce to a market, but this is rare. It is more common to meet farmers on the local buses carrying piles of carrots or tomatoes, for example, to market. It must be pointed out, however, that many farmers in fact sell goods in their own village (table 8.9). Nearly 40% of the farmers sold goods in their own village; over 50% sold them in Sousse. These were the two

Table 8.9 Major Markets for Village Produce

Market	No. of Farmers					
	Maatmar	Mesjed Aissa	Menzel Khir	Sidi Bou Othman	Oued Zibs	Total
Sousse	6	10	10	8	2	36
Monastir	-	-	2	2	1	5
Sahline	1	-	-	-	-	1
Ouardenine	-	1	5	2	2	10
Djemmal	-	-	6	4	4	14
Own Village	8	5	4	7	2	26

main areas used for sale. It will be noted, however, that farmers from the three southerly villages, Menzel Khir, Sidi Bou Othman and Oued Zibs, used Ouardenine and Djemmal.

The exception to the ad hoc arrangements for marketing is the use by some farmers of Douana Zit, the large olive press and depot of the ONH located in Sousse. Many farmers took their olive crop here to be pressed. Although the ONH provides a centralized market for olives and consistent, controlled prices, no attempt is made to organise collection of olives. It is still up to the individual farmer to take his produce to the plant.

Considering the relatively low quantity of goods produced by individual farmers, the present ad hoc unorganised marketing system works well and is suited to the situation. There is scope for some rationalisation of olive collection and sale through the auspices of the ONH, but otherwise the system is suited to present conditions. Should the required rationalisation of the regional agricultural production system take place, then this would also require an improved marketing system.

8.4 Credit

There is a wide range of sources for agricultural credit (Chapter 3). Awareness of these sources amongst farmers is, however, limited (table 8.10).

Table 8.10 Number of Farmer Respondents Aware of Credit Availability

	Maatmar	Mesjed Aissa	Menzel Khir	Sidi Bou Othman	Oued Zibs	Total
Yes	14	12	12	14	4	56
No	1	2	1	3	2	9
n/a	-	-	1	-	-	1

Over 15% of the farmers were unaware that credit was available to them - this despite publicity campaigns by both the PSD and the PDR. Of those who were aware of credit availability, their knowledge of potential sources was limited in the extreme (table 8.11).

Table 8.11 Credit Sources known by Respondents

Credit Source	Maatmar	Mesjed Aissa	Menzel Khir	Sidi Bou Othman	Oued Zibs	Total
Bank	12	9	8	14	1	44
Douana Zit	2	1	-	1	-	4
PDR	-	1	1	-	-	2
PAM 483	-	-	1	-	-	1
Agricultural Union	-	-	1	-	-	1
n/a	-	4	2	5	5	16

To many farmers (66%), the Bank was the only source of credit of which they were aware. Only two farmers mentioned the PDR as a potential source of credit. In the light of all the

agricultural development work and the grants made available through this programme, this is an appalling figure. If the PDR wishes to achieve its aims it must make people more aware of its facilities. It is also surprising that just 4 farmers mentioned the Douana Zit as a potential credit source. Credit supply, short-and long-term, is one of the prime functions of the state agricultural production office. It would appear that they, like the PDR, are not making farmers aware of their potential.

It is thus hardly surprising that 82% of the farmers interviewed stated that they would like to see credit more accessible (table 8.12).

Table 8.12 Number of Respondents Wishing to See Greater Agricultural Credit Availability

	Maatmar	Mesjed Aissa	Menzel Khir	Sidi Bou Othman	Oued Zibs	Total
Yes	12	8	13	15	6	54
No	3	5	1	2	-	11
n/a	-	1	-	-	-	1

8.5 Farmer Reaction to PDR Agricultural Development

Not only therefore is the agricultural production system inefficient and in need of revitalisation, but the agricultural economy is also inadequate. Although credit provision has been made, farmers are unaware of its potential. The marketing system of the moment is very ad hoc and individually based, which is adequate for present production systems, but will need reviewing should the necessary developments take place in local agriculture.

It is not as if the farmers themselves are unaware of the problems they face. They were asked a) if credit were

made available to them what would they spend it on, and b) what changes would they like to see made in agriculture (tables 8.13 and 8.14). Responses to both questions provide an indication of the problems as perceived by the farmers themselves.

Table 8.13 Items Credit Required for by Farmers

Items	Maatmar	Mesjed Aissa	Menzel Khir	Sidi Bou Othman	Oued Zibs	Total
Livestock, especially Chicken	3	1	2	6	4	16
Land Improvement	5	6	5	9	4	29
New Trees	3	1	1	-	-	5
Seed and Fertiliser	2	-	2	-	-	4
Water	3	3	1	3	2	12
Housing	2	-	4	2	2	10

Table 8.14 Changes Which Farmers Wished to See Take Place

Changes	Maatmar	Mesjed Aissa	Menzel Khir	Sidi Bou Othman	Oued Zibs	Total
More Water	6	10	8	15	6	45
Increase mechanisation	9	6	11	4	2	32
Diversification of crops	1	1	3	2	-	7
Improve techniques	2	1	-	3	-	6
Increase capital/credit	2	1	-	-	-	3
Modernisation	1	1	-	2	-	4
Land Reform	1	1	1	-	-	3
More Workers	1	3	2	-	2	8

High on most people's list of priorities was an improved and increased water supply for agriculture; 45 farmers saw this as the main change that they would like to see, although only

12 wished to pay for it themselves.

Most other changes listed by respondents relate to general land improvement and improvement of production techniques. For example, 32 farmers wished to see increased mechanisation, 6 improved farming techniques, and 4 general modernisation of agriculture. It would appear, though, that in this area farmers were more willing to pay for such developments themselves - .38 in all wanted credit for land improvement, new stock and seeds and fertiliser.

It will be noted that just three farmers actually stated that they would like to see some form of land reform, this despite the problems associated with the present land ownership structure. Given that all respondents were themselves land owners, this is hardly surprising, as it would be against their own immediate interests for such development to take place.

One of the most obvious means to reorganise and revitalise the entire agricultural system in the region would be the establishment of co-operatives. These would surmount the land tenure problems, would create a potential for increased efficiency of land management, yield increased incomes and stabilise employment. When farmers were asked if they would be prepared to try co-operatives again, provided that lessons learnt from the previous experience were adhered to and that membership was not imposed but was voluntary, a mixed reception was received. Decisions for and against were split almost 50 - 50; 34 farmers were for and 32 were against. However, those that were for, tended to envisage small-scale service co-operatives. Few were in favour of any kind of production co-operatives. It would appear that feeling against such a system was still high after the previous experience. When

asked why farmers would not like to re-establish co-operatives, nearly all stated that it was because they had no confidence that a co-operative system would solve the problems facing agriculture. In particular, they felt that individual members would lose even more incentive to work and improve their land.

The answer to agricultural development in the region obviously does not lie with such developments, but must be oriented along the following lines:

i) a considered land reform programme which, if unable to alter size of holdings, should at least attempt some form of consolidation;

ii) increased active and visible involvement by the PDR and CRDA in agricultural development. The framework and materials exist; it is time that more practical and active use were made of them;

iii) credit systems must be implemented and farmers made more aware of credit potential;

iv) increased agricultural extension to enable farmers to achieve the maximum potential from their land;

v) an incentive system through price control and subsidies would encourage farmers to produce more for the market and less for themselves. This would stimulate management efficiency, encourage diversification and perhaps lead farmers into producing more of the crops needed.

8.6 The Nebhana Scheme; With Reference to Sahline Périmètre Irrigué

8.6.1 OMIVAN

The Nebhana scheme, administered by the Office de Mise en Valeur de Nebhana (OMIVAN) is one of the major irrigation schemes of Tunisia. A dam built across the Oued Nebhana, 47kms

north-west of Kairouan, stores a maximum of 3 million m^3 of water to irrigate a number of périmètres irrugés through Kairouan governorate and the Sahel. The Sidi Messaoud, or Nebhana dam, constructed between 1962 and 1969 and financed by the American Government, is supplemented by a secondary dam on the Oued Bel Assaoud, a tributary of the Nebhana which provides a further average 1.5 million m^3 a year. In addition, 12 deep wells tap the Sisseb acquifier and from these an annual average 1.5 million m^3 of water is pumped into the Nebhana conduit south-east of the main dam. Total annual water potential from the three sources is 85 million m^3 p.a., but inevitably this is highly variable depending on annual rainfall. Capacity of the dam is sufficient, however, to cope with three years of drought.

From the dam the water is piped to twelve périmètres irrigués (figure 8.2) totalling 4500ha.

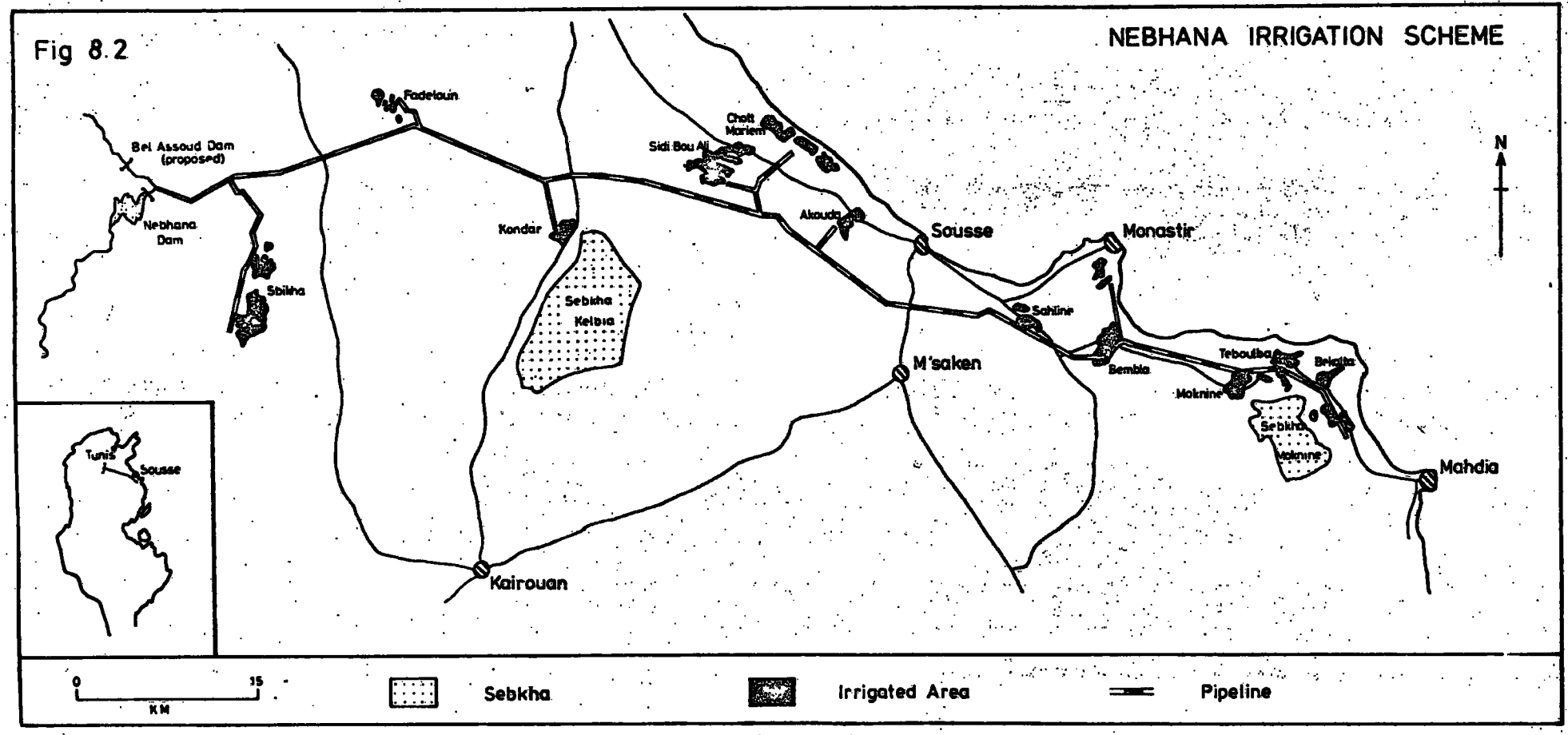
Table 8.15 OMIVAN Irrigated Areas

	Irrigated Area	Governorate	Ha	Crop
1.	Sbikha	Kairouan	1163	Aboriculture
2.	Fadeloun	Kairouan	161	Aboriculture
3.	Kondar	Sousse	140	Aboriculture
4.	Sidi Bou Ali	Sousse	938	Aboriculture
5.	Chott Meriam	Sousse	573	Culture Maraîchère
6.	Akouda	Sousse	205	Aboriculture
7.	Sahline	Monastir	173	Culture Maraîchère
8.	Monastir	Monastir	200	Culture Maraîchère
9.	Bembla	Monastir	440	Culture Maraîchère
10.	Moknine	Monastir	156	Culture Maraîchère
11.	Teboulba	Monastir	153	Culture Maraîchère
12.	Bekalta	Monastir	363	Mixed

Source: OMIVAN 1978

In addition, water is also piped to a number of other organisations for irrigation and, in one instance (a milk plant), for

Fig 8.2


NEBHANA IRRIGATION SCHEME
N
Fadeloun
Bel Assoud Dam (proposed)
Nebhana Dam
Sbikha
Kondar
Sebkha Kelbia
Chott Mariem
Sidi Bou Ali
Akouda
Sousse
Monastir
Sahline
Bembla
M'saken
Teboulba
Beklita
Moknine
Sebkha
Moknine
Mahdia
Kairouan
Tunis
Sousse
0
35
KM
Sebkha
Irrigated Area
Pipeline

refrigeration (table 8.16).

Table 8.16 Utilisation of Nebhana Water (non-irrigated areas)

	L/s
SONEDE	100
Sousse Nord (hotel gardens)	30
Société d'Elevage, Monastir	10
Tunisie Lait, Sidi Bou Ali	10
Agricultural Research, Sahline	4
Nursery project, Monastir	7
Ouardenine Farm	6
Chott Meriam CFP	6
Total	173

Source: OMIVAN 1978

Five of the p.i.'s are utilised predominantly for irrigated tree farming. These are located away from the immediate coastal zone, where the climate is moderated by the proximity of the sea, making irrigated cultivation more suited to culture maraîchère. Water consumption obviously varies from year to year and from crop type to crop type but, on average 5000 m^3 per annum are consumed per hectare on the p.i.'s (OMIVAN 1978). Added to the water distributed to other institutions, this gives an annual average water consumption of between 25 and 30 million m^3.

Overall managerial responsibility for the project is that of the Office de Mise en Valeur de Nebhana, located in Sousse. The functions of this office are six fold:

i) the supply and maintenance of water distribution and installations to all p.i.'s;

ii) development of all other infrastructure, such as roads,

pistes and drainage on the p.i.'s;

iii) to conceive and lead by example actual development of the p.i.'s;

iv) to facilitate the access of farmers to various credit sources;

v) to promote the teaching and spread of new and appropriate agricultural techniques;

vi) to assist farmers to make better use of existing commercial circuits.

(Dargouth 1979).

The overall objective is thus to ensure that maximum use is made of the resources made available and developed within the framework of the project. Physical infrastructure of OMIVAN is based on a large central administrative complex in Sousse. All the main administrative functions are carried out here and most of the engineers are also located at this office. In addition, each p.i. has its own small administrative centre responsible for organisation and data collection in its own area. OMIVAN runs a small research centre at Sahline and is developing a processing and packaging centre at Bekalta. Extension work is based at Sousse, although each local centre has a small team of semi-skilled extension workers who provide regular and immediate contact with the farmers.

8.6.2 Nebhana Irrigated Areas: Production System

a) Infrastructure and water distribution: OMIVAN, in common with the other major irrigation development offices, does not own land. Its function is to provide the infrastructure and vulgarisation and to sell the water to farmers who own land on areas determined as périmètres irrigués . Selection of areas for development as périmètres irrigués is dependent upon three main criteria:

i) soil

ii) ecology

iii) topography

For the Nebhana scheme, the intention was also to distribute the p.i's throughout the Sahel in order to spread their benefits as much as possible.

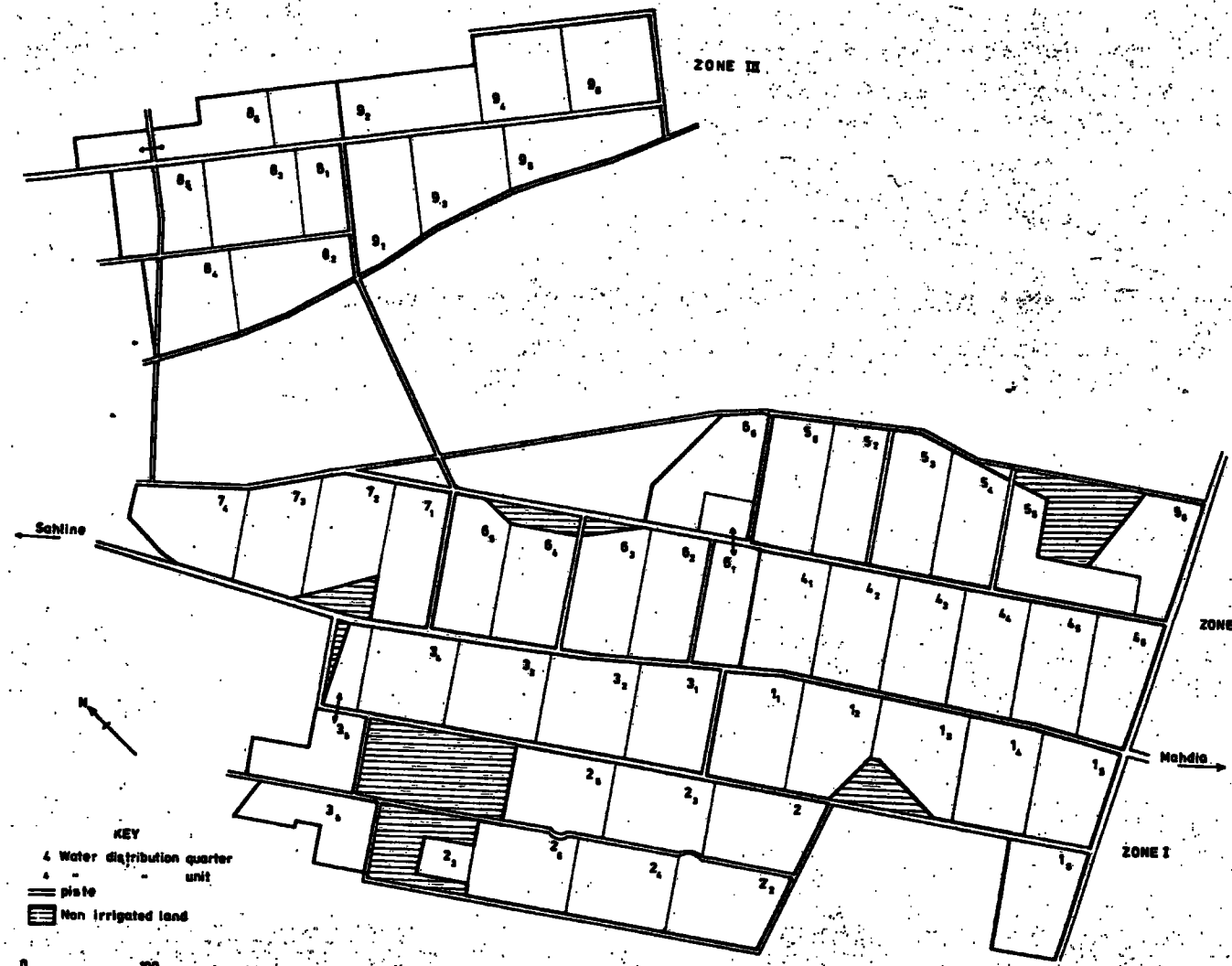
Once an area was selected, OMIVAN provided bulldozers and other heavy plant to level the land in order to make it suitable for irrigated farming, prepared a network of pistes providing easy access to all parts of the p.i. and laid the pipes and meters necessary for water distribution.

The Sahline irrigated area was divided into three zones; zones I (85ha) and II (55ha) lying in a plain bounded to the west and east by ridges and separated by the Sousse - Mahdia road, and Zone III (33ha) being situated to the south-east of the village, bordered on one side by a ridge, and on the other by a sebkha. The piste network, illustrated in figure 8.3, is comprehensive and is in an excellent state of repair, providing good access to all parts of the p.i.

Water is piped to individual p.i's through a major conduit in which pressure is maintained by a series of brise charges. At the p.i., water enters a hierarchical distribution network. Each p.i. is divided into quarters (figure 8.3). Quarter size varies between p.i's but, as a general rule, are approximately 20ha in areas of cultures maraîchères and between 10 and 20ha on zones used for tree cultivation. Water is taken from the main entry point to each quarter through a primary network of underground pipes. Water is metered upon entry to each quarter, where it is distributed through a secondary network of surface pipes to individual units - units being on average 3.2ha in market gardening areas and between

Fig 8.3

SAHLINE IRRIGATED AREA
WATER DISTRIBUTION STRUCTURE



Source: OMIVAN (Sahline)

4 and 5 ha in areas of tree farming. A tertiary network of earth channels distributes water to individual lots (0.8ha and 1.3 - 2.5ha for market gardening and tree farming respectively).

Water supply to the individual lot, or even unit level, is not constant. On the Sahline p.i. two modes of distribution are organised. During the peak demand period (May to the end of August or beginning of September), irrigation is by rotation. All quarters are simultaneously irrigated with a head of water of 10 l/s. Within each quarter, rotation takes place whereby metering points (usually unit level) receive water sequentially - with one metering point at a time operating. In 1978 and 1979, however, owing to two very dry periods, water shortages at p.i. level became critical. In 1978, individual lots had to be restricted to 50% of their total productive area because of the lack of water, and in mid-July 1979 the water supply was shut down completely because of the low level of the water supplies. This occured despite the three-year storage potential of the dam and the resultant problems for the farmers are easy to envisage.

Outside peak periods irrigation is by request. Each day, three men from the Sahline local office tour the three zones, turning on water where required. At Sahline there is a strong head of water due to the proximity of the Mesjed Aissa brise charge. Consequently, off-peak water pressure is high (40 l/s). Irrigation by request operates at the unit level.

The overall network for water distribution within the Nebhana scheme is comprehensive and provides a logical framework. Unfortunately, as with many other elements of the development process, finishing touches have been sadly lacking in quality. It is estimated that water losses through the distribution network are as high as 40% (OMIVAN 1979). Whilst

some losses are expected (10% was the level forecast), present rates are excessive. Although some of the losses are unavoidable, most are due to mismanagement and can be reduced, if not completely eliminated.

Water loss from the main conduit is relatively low; it is at the périmètre level that the most serious problems occur. Primary and secondary network pipes are poorly maintained. Secondary network pipes in particular are frequently broken and inadequately joined. Specially designed pipes are used which enable flexibility and easy movement amongst plots (Bauer tubes), but clip joints are often broken or inadequately fastened. It is not unusual, either, to find secondary pipes laid across a track, with no protection. These are constantly crossed by carts and motor vehicles and inevitably break.

At the tertiary level, water travels over considerable distances in channels dug into sandy soils. Seepage and evaporation are high.

Metering of water at all points in the périmètre distribution network is inadequate. Lack of instruments limiting the flow of water at the entry point to the p.i. and over-large supply pipes prevent controlled input of water to the area. A shortage of meters at both secondary and tertiary level results in over use of water by farmers and an inability for the OMIVAN workers to control individual water consumption. Lack of metering at this level also prevents the maintenance of proper pressure levels so that farmers take more or less than is required. Overall control of water distribution and consumption is therefore virtually impossible.

Finally, the price of water is not conducive to conservative use by farmers. In 1979, the price stood at 12 millimes/m^3 (compared with 84 millimes/m^3 for domestic water).

This is an artificially low price maintained by OMIVAN.

As water resources are so scarce in Tunisia, and taking into account the high investment required to establish the Nebhana scheme (5000 TD/ha), there is an urgent need to reduce water loss. A few relatively cheap and simple measures, with some improved careful management at all levels could bring this about:

i) improved repair and maintenance of primary and secondary pipes;

ii) protection for pipes where pistes have to be crossed;

iii) extension of the length of covered pipes at the tertiary level and, where open ditches are necessary, encouragement of the use of black plastic/ polythene layers (polythene sheeting from dismantled serres would make this move virtually free);

iv) the use of small (approx. 2m x 2m x 0.3m) reservoirs lined with plastic, at individual plot level to enable farmers to store water and to spread its utilisation more efficiently;

v) improved metering at all levels of the network;

vi) consideration of alternative methods of irrigation, such as sprinkler or drop methods;

vii) increase the price of water to a more realistic figure. At the moment, given an annual consumption of 5000 m^3/ha p.a., the cost of water to a farmer is 80TD/ha. If the unit price was perhaps split between peak and off-peak periods, and peak period price raised to c.25 millimes/m^3, this would still not place an intolerable burden on the farmer, particularly in light of his potential increases in income from irrigated farming.

With reference to the Sahline p.i., it is worth noting that water distribution in Zones I and II was far more efficient than in Zone III. Metering problems and broken pipes

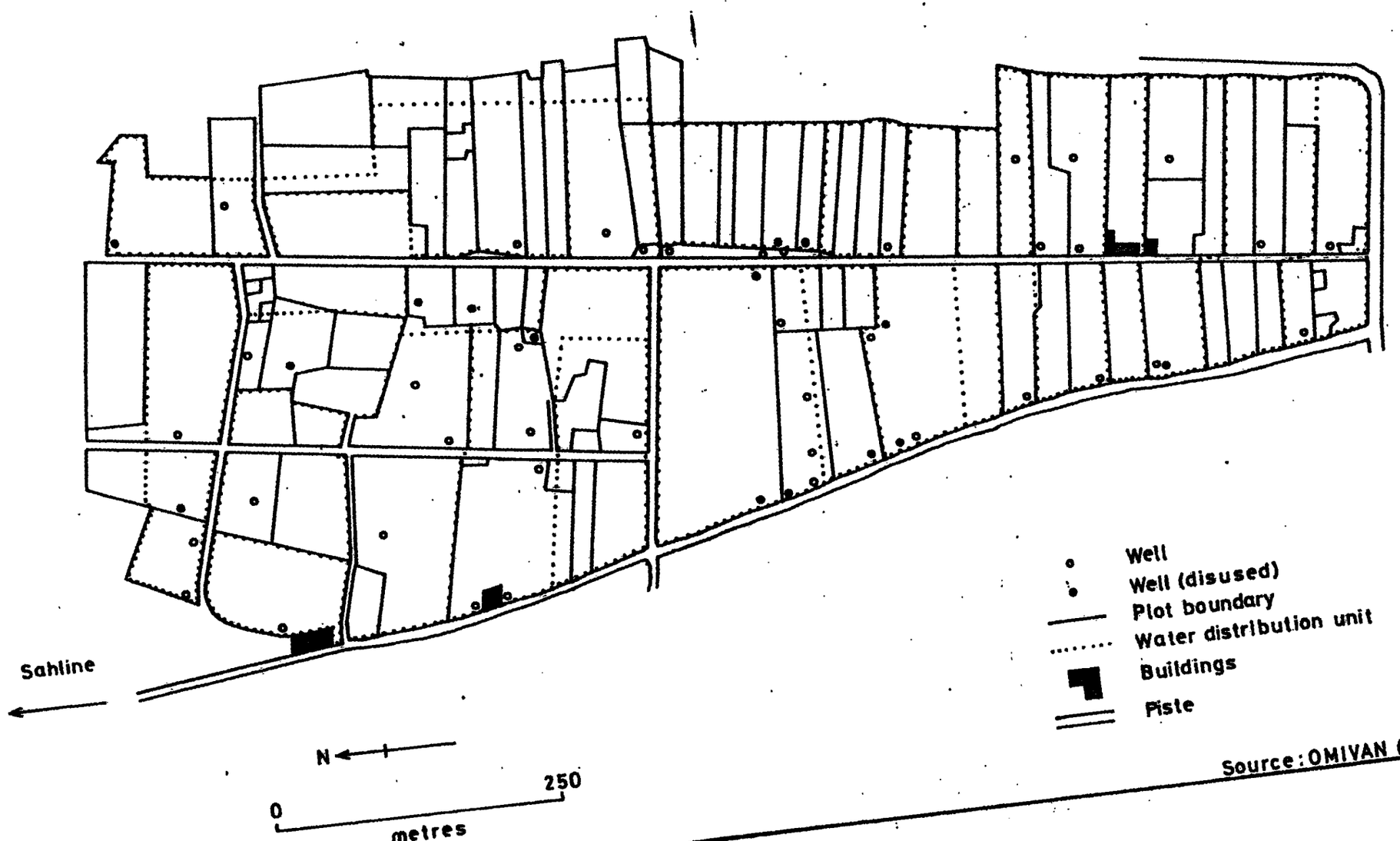
were prevalent throughout the p.i., but in Zones I and II, open irrigation channels were kept to a minimum and there was evidence of plastic lining for open channels plus the use of small cisterns. Cultivation in Zone III was of a very different character (see below) and greater use was made of gravity flow along lengthy open channels. Water was directed simply by blocking or unblocking sandy water-ways. Seepage was high and water use inefficient. When questioned about water supply to the p.i., farmers from all zones expressed dissatisfaction. They were particularly concerned that the supply be better regulated both on a daily basis and on a year to year basis (over 50% of the respondents mentioned this). Farmers were also unhappy with the way in which they had to rely upon the visit of one of the adjoints techniques before water could actually be switched on. The feeling was that widespread provision of meters and individual stopcocks would enable farmers to plan their water use better (it was recognised that at peak periods control needed to be retained at the quarter level by OMIVAN).

Any attempt to raise the price of water, however, would clearly meet with strong opposition; 66% of respondents were happy with the price as it is and 33% actually thought it too high.

b) Land Ownership: Land ownership is one of the major problem areas on all p.p.i's in Tunisia (Dargouth 1979). Areas selected for irrigated development take no account of land ownership structure. In the case of the Nebhana scheme, the boundaries and water distribution network are imposed on the land, taking no account of land holdings. Land ownership, and its relationship to the quarters, units and lots on Zone III Sahline are illustrated in figure 8.4. The lack of complementarity inevitably aggravates problems of water

Fig 8.4

LAND OWNERSHIP STRUCTURE SAHLINE P.I. ZONE III



Source: OMIVAN (Sahline)

distribution.

Creation of the Sahline p.i. (1971/72) corresponded with an extension of the nearby Dkhila hotel complex. This area had previously been one of irrigated market gardening and farmers faced with lost land were offered tracts of land within the Sahline p.i. as compensation. This had the advantage of ensuring that consolidated land holdings were taken over by experienced and skilled farmers. There were, however, many farmers who owned land within the p.i. prior to its inception. Of the farmers questioned, 60% had occupied, or worked the land only since 1971/72, whereas the remaining 40% had had connections with the land for many years.

Because land holdings were offered to many farmers from outside the p.i., fragmentation of individual plots was avoided and is not a problem in Sahline as it is elsewhere on other p.i's. What has caused certain difficulties is the jealousy of farmers who own/work land outside the p.i. and resent the fact that they have been unable to take advantage of the water.

All irrigated land development agencies in Tunisia set maximum and minimum sizes for areas to receive water under one ownership. For the Nebhana scheme, these limits are 6ha and 0.8ha respectively. It is clear in figure 8.4 that considerable variation occurs within these limits. This is a practival move in that, in theory, it ensures that water is distributed amongst as many owners as possible without rendering plot sizes impractical in the use of water. Unfortunately, it does not work completely. Farmers with plots towards the 6ha limit tend not to farm the land as intensively as they might. On the one hand they often have insufficient capital in order to do so, and on the other, there is often little incentive. Substantial incomes can be generated without going to the extra effort required to exploit fully the whole area of a large plot. At

the other end of the scale, farming of plots of less than 1.5ha cannot be very efficient, the scale is too small to really justify capital investment and land development. Of the thirty farmers questioned, mean holding size was 2.34ha. Taking account of the difficulties mentioned above, there is a need for some kind of land reform that will increase the minimum size holding and decrease the maximum size and thus to re-arrange the land structure such that mean holdings are nearer 3ha.

Unlike the land ownership structure in the villages, that within the irrigated area is more of a mixture of owner-farmed, share cropping and rented. Owner-farmed is the predominant form (60% of those questioned), but approximately 20% had a sharecropping agreement based on a 50 - 50 share of profits, with the land-owner providing the capital and the worker the labour. The remaining 20% rented their land at a fixed annual rate, usually 200TD per annum. This structure gives rise to a number of difficulties. On the rented plots there is a lack of security of tenure; agreements are made on a yearly basis and there is a lack of incentive for land investment and development. Inefficient management and greatest water losses were noted on such plots. Landowners take little interest in their land as they usually have income from other sources and as a result full potential is not realised.

On both rented and share cropped land conflict arises over who should bear the cost of the original development and subsequent improvements made to the land. When périmètres irigués are established, farmers are charged a proportion of the cost of development. This charge is based on:

i) expected income

ii) plot size

iii) soil quality

iv) number of dependents

v) location of the p.i.

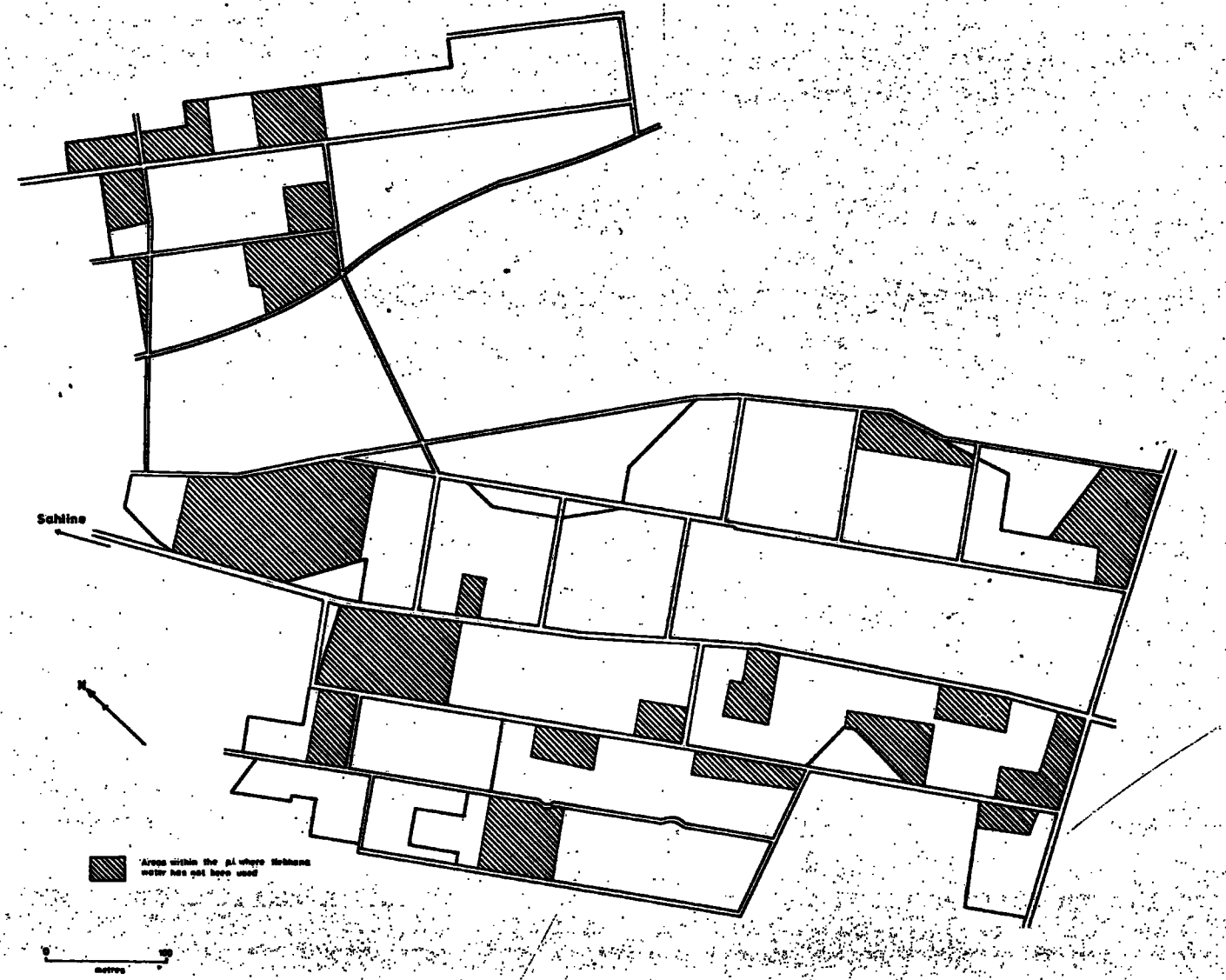
Subsequent developments, such as a new metering system, are charged in the same way, and it is over such costs in particular that conflict arises. As the situation stands at the moment, there is considerable confusion as to the legal requirements. Consequently, disputes develop between owner and land worker.

If a farmer's land falls within a périmètre irrigué, he is under no obligation to develop its irrigable potential. In 1958, a law was passed requiring all farmers with land within the Medjerda scheme to develop at least two-thirds of it. This law has not been enforced in the Medjerda and has certainly not been extended to other irrigation schemes. Consequently, non-irrigated or even completely disused land is evident in many p.i.'s; such areas in Sahline are noted in figure 8.5. In 1977/78, 132.9ha of the Sahline p.i. was cultivated. This represents 76.8% of the total cultivable area. Again, to ensure more efficient use of the capital investment, enforcement of a legal requirement to develop a substantial proportion, if not all land contained within a p.i., is required.

c) Production: The prime advantage of the development of irrigated areas is that it enables both intensification and diversification of agricultural production. On the p.i.'s utilised for arboriculture, a break can be made away from the dominance of the olive and high yields gained from the production of citrus fruits and other fruit trees, particularly apricots. But it is on the périmètres irrigués where market gardening is carried out that greatest gains can be made. With

Fig 8.5

SAHLINE IRRIGATED AREA:
EXTENT OF ADOPTION OF NEBHANA WATER



water for irrigation there are three potential producing periods in the year, arrière saison et hiver (November - December), primeurs (February - April) and saison (May - July). Prior to the development of the Sahline p.i., olives were the dominant crop in the area; of the farmers questioned who cultivated the land prior to the provision of Nebhana water, over 80% grew olives. A few (10%) grew just vegetables, but for several farmers, a combination of vegetables, olives and wheat or barley formed the basis of their production. With the advent of the p.i., this cropping system has changed dramatically (table 8.17).

Table 8.17 Sahline Irrigated Area: Cultivated Area

	1976/77		1977/78	
	Ha	%	Ha	%
Arrière Saison	21.13	15.9	15.52	11.8
Hiver	26.87	20.2	20.48	15.6
Primeur	71.08	53.5	86.87	66.0
Saison	6.65	5.0	4.69	3.6
Cereals/Fodder	7.21	5.4	3.97	3.0
Total	132.94	100	131.53	100
Total cultivable area	173.00		173.00	

Source: OMIVAN Unpubl. statistics

Although conditions are not quite suitable for a farmer to get two crops a year from one plot of land, the opportunity to produce in three to four separate periods during the year does permit a farmer to diversify and intensify his production system.

In 1976/77, 36% of the Sahline p.i. was utilised for arrière saison and hiver crops. Although this declined to just over 27% by 1977/78, the proportion is still substantial. The range of produce cultivable in this period is naturally limited (table 8.18), but those of winter in particular had to

be nitrogenous crops that replenish the soil.

Table 8.18 Sahline p.i.: Arriere Saison and Hiver Production

	Arrière Saison Cultivated area (ha)			Hiver Cultivated area (ha)	
	1976/77	1977/78		1976/77	1977/78
Potatoes	14.01	14.11	Fennel	0.04	0.07
Pimentos	1.14	0.31	Beans	3.49	1.49
Tomatoes	5.98	1.10	Onions	7.93	8.23
			Peas	0.45	-
			Misc.	14.96	10.06
Total	21.13	15.52	Total	26.87	20.48

Source: OMIVAN 1978.

The value of arrière saison and hiver crops are thus two-fold; they allow the use of a productive rotation system on the soil and secondly, enable farmers to produce crops at a time when demand is high and supply is low.

It is, however, the primeur (early season) crops which represent the greatest advantage of the irrigated areas. Using water and large plastic greenhouses (serres), farmers are able to produce a wide range of crops earlier in the year than would otherwise be possible. The greatest proportion of the Sahline p.i. is used for primeur cultivation, and the proportion is growing (53% 1976/77, 66% 1977/78). In 1975, there was just one large serre on the p.i., by 1977/78 this had increased to 92, and by 1979/80 to 270. Of the farmers interviewed, each had an average of 3.6 serres by 1979/80. The range of crops that can be grown under these favourable conditions is wide (table 8.19), although in Sahline, melon, potato, tomato and pimento production dominate.

Farmers still produce market garden produce in the 'normal'

Table 8.19 Sahline p.i.: Primeurs Production
(ha)

Crop	1976/77	1977/78
Cucumber	1.29	2.82
Pumpkin	2.96	6.21
Courgettes	0.40	0.84
Melon	1.37	2.89
Water Melon	33.51	30.87
Pimento	6.97	8.19
Potato	9.54	21.20
Tomato	6.79	7.84
Strawberry	-	0.15
Miscellaneous	8.25	5.86
Total	71.08	86.87

season, May to early July. With the advantage of irrigation, production in this period is more regular and predictable than in other areas of market gardening in the Sahel. The range of crops is not dissimilar to those of the primeurs, but given that supplies of these crops at this time of the year are high due to their production on land irrigated from wells, Nebhana farmers prefer to concentrate on primeur production. Cultivated area utilised for saison crops is, therefore, relatively low (table 8.20).

Table 8.20 Sahline p.i. Saison Production
(ha)

Crop	1976/77	1977/78
Cucumber	-	0.08
Pumpkin	1.38	0.83
Melon	0.16	-
Onion	-	0.06
Water Melon	0.63	0.35
Pimento	3.54	3.23
Tomato	0.25	0.06
Miscellaneous	0.69	0.08
Total	6.65	4.69

Source: OMIVAN 1978.

Finally, in line with government attempts to extend the production of fodder crops on p.i.'s in order to ease the deficit of fodder production in Tunisia, a small proportion of land on the Sahline p.i. has been utilised for this purpose. In 1976/77, only 7.21ha (4.2% of total area) of fodder crops were grown, and in 1977/78 this fell to just 3.65ha (2.1%). Clearly, government attempts on these lines are as yet having little effect.

To a farmer, the advantages of crop production on a périmètre irrigué are thus several. Four crops can be produced at different times of the year, thus enabling him to spread his risk and income; a wide range of high value crops can be grown and possibly the main advantage of them all is that his peak production period can be in spring time when he can produce crops for which there is a very high demand, but very low supply, thus ensuring a high price.

Despite the advantages, inevitably there are problems. Irrigated farming requires considerable skills that are very different from those needed by the farmers prior to the irrigation of the land.

Soils on the irrigated areas of the coastal zone, including that of Sahline, are strongly leached and characterised by a high degree of permeability, a weak capacity for retaining water, and are poor in mineral and organic matter. Making abundant water available at a low price, combined with a lack of expertise on behalf of the farmers, has led to qualitative and quantative irrigation which has most often been uncontrolled (OMIVAN 1979). This has brought about a rapid deterioration in the physical chemistry of the soils. As a result of mismanagement of irrigation, the content of organic material has fallen, humus has disappeared and mineral elements have been leached from the soils. A number of measures have been suggested to combat

this problem:

i) the establishment of a fertilizer factory to treat urban refuse from Sousse and other nearby towns;

ii) extension of 'cultivated fallow' using deep rooted leguminous crops which grow well in light soil in winter and spring;

iii) utilisation of synthetic elements such as polyurethanes in conjunction with organic fertilizers;

iv) extended application of mineral fertilizer.

This must be done with reduced water consumption in order to prevent loss of minerals as a result of the poor water-retaining capacity of the soils (OMIVAN 1979).

None of these measures have as yet been implemented.

The use of the large serres and smaller plastic cloches also require particular skills. Serres cannot be kept in one place for more than two years at a time as the soil becomes exhausted. Neither can the same crop be grown for two years in succession. Ventilation of serres and cloches is important, but this must be done at the right time of year and of day in order to protect the crops. Fertilization, soil preparation and planting have all to be done with great care in order to gain maximum benefit. Because of difficulties such as these that are faced by farmers, there is a marked reluctance on all p.i.'s by farmers to fully adopt irrigation techniques (Dargouth 1979). This is noticeable also on all three of the Sahline zones (figure 8.5).

The provision of a comprehensive team of extension workers should enable farmers to surmount the technical difficulties of irrigated farming. OMIVAN has recognised the importance of extension work since its inception and extension is seen as one of the prime functions of the office. Based at the Sousse administrative centre is a team of trained extension workers.

These are supported at the level of the individual p.i. by less skilled workers who do have a more intimate knowledge of their area. However, although all farmers questioned on the Sahline p.i. expressed satisfaction with the extension services provided by OMIVAN, a number of difficulties were evident. First and foremost was that, despite the tremendous enthusiasm for their work that was evident amongst the teams of extension workers, many were young and very inexperienced. Training facilities for these teams have only been established during the 1970s. Because of their youthfulness and inexperience, many farmers, particularly the older ones, were reluctant to take advice given to them. This problem has been ameliorated to a certain extent by the existence of the Proje t Tunisó - Belge de la Vulgarisation, a project wherein Belgian agricultural and irrigation specialists are funded by the Belgian government to work with OMIVAN on Nebhana p.i's. The project was initiated to help with the initial development of the project. Much of the Belgian assistance was given through the use of demonstration plots on each of the culture maraîchère irrigated areas. The liason with Belgian experts was certainly successful, but the project came to an end in 1980 with the departure of the last Belgian workers.

In the light of the innovative nature of much of the irrigation development, there is a requirement for research to explore new developments and possible improvements within the production system. The absence of such research has been noted elsewhere (Dargouth 1979, El Amami 1977). One of the problems is that in Tunisia there is an inadequate lack of data relating to irrigated agriculture. Until this can be built up, effective applied research will be limited. OMIVAN does have its own research facilities - a Station d'Appui Nebhana located at Sahline. This is only a small establishment and its facilities are limited.

National research facilities are available at INRA, Tunis and other specialised centres, but in all, irrigated agriculture research facilities are inadequate.

8.6.3 Inputs

In his analysis of the problems of Tunisian irrigated areas, Dargouth concludes his discussion by arguing that a reorganisation of production systems alone is inadequate. Although essential, it must also be supported by improvements up and downstream of the production level (Dargouth 1979). Upstream improvements hinge around streamlining of material inputs and betterment of credit facilities. Within the OMIVAN system both are closely related. Irrigated farming is expensive in terms of material requirements. Although OMIVAN provide the basis infrastructure and the water, other upstream requirements are needed on a yearly basis (fertilizer, seeds etc.), a medium-term basis (tools, serres, fencing, wind breaks etc.) and long-term basis (machinery, land levelling etc.). Supply and finance for these comes from three main sources, IBRD, FOSDA and OMIVAN.

a) FOSDA:

The role of FOSDA was outlined in Chapter Three. Its contribution to the Nebhana project is summarised in table 8.21. Although this represents finance for the year 1978/79, it is indicative of the kind of things financed by the fund. Money from FOSDA, linked to specific items is provided to individual persons in the form of grants and loans; the proportion of each varies from item to item and area to area. All items covered by FOSDA finance medium-and long-term requirements.

Table 8.21 OMIVAN/FOSDA Credit 1978/79

Nature of Credit	No. of beneficiaries	Dinars (Grants & loans)	Observations	
1. Arboriculture				
Trees	70	44,317	Citrus fruit	30ha
Wind breaks	60	12,000	Nut trees	30ha
			Windbreak	60ha
			Miscellaneous	10ha
		56,317		
2. Elevage				
Cattle	20	6,400	Special breed	
Draught animals	81	16,200		
		22,600		
3. Rural Housing and Agricultural Buildings:				
Water basin	30	96,000		
Houses	20	88,000		
Magasins de St.	5	3,200		
Hangar	5	20,000		
		127,800		
4. Purchasing				
Serres (50ha)		640,000		
Misc. mechanical		16,000		
		656,000		
Total		862,717		

Source: OMIVAN Unpubl. statistics

b) IBRD: Finance from the International Bank for Reconstruction and Development is in two forms. On the one hand there is an annual budget for elements very similar to that of FOSDA (table 8.22).

Table 8.22 OMIVAN/IBRD Credit 1978/79

		Dinars	No. of beneficiaries
Water Distribution Improvements		97,000	37
Marketing Cooperative		625,000	
Service distribution centre		60,000	
Misc. Equipment:	Lorries	65,000	5
	Vans	32,500	10
	Packaging	310,000	
	Construction Equipment	255,000	
	Total	722,000	52

Source: OMIVAN Unpubl. statistic

Again, the emphasis is on medium-and long-term credit for individual farmers, although included in the IBRD budget is finance for service and marketing facilities.

The other aspect of IBRD credit relates to the project as a whole. In 1973, IBRD awarded OMIVAN a 3m TD loan for rehabilitation of project infrastructure, in particular for the repair of broken pipes, and the improvement of pistes. At no cost to the farmer, additional finance has been made available by the IBRD for the clearance of land (uprooting of olive trees and levelling of land) in preparation for the construction of serres, wind breaks and water meters. IBRD involvement in the Nebhana scheme is therefore considerable.

c) OMIVAN Credit: Unlike FOSDA and IBRD credit, money made available by OMIVAN is concentrated more towards medium-and short-term requirements and is distributed in two forms; crédit en nature and short-term loans for the purchase of seeds, fertilizer and serres. Crédit en nature is organised at the p.i. level and entails the direct provision of materials to farmers (fertilizers and seeds in particular). A farmer will be expected to pay for these from his harvest. In 1977/78, OMIVAN crédits en nature totalled 606,901 Dinars. This was an increase of almost 20% from the previous year. In addition, OMIVAN provides medium-term loans (2 - 5 years) for the purchase of pieces of equipment such as serres. A serre costs between 1000and 1400TD (1979) and a farmer can get a loan of up to 90% of the cost for their purchase. Interest rates are low (1 to 2%), but OMIVAN officials made it clear that farmers were not allowed to fall behind on payments.

In addition, farmers on p.i.s have access to the normal BNT and PDR credit.

Overall, farmers appeared to be satisfied with credit facilities. Twenty-six of those questioned were happy with credit services, and only one was dissatisfied. Three were unsure as they had not had any need to use any. However, as Dargouth has suggested for other irrigation projects, there is an abundance of credit and aids for medium-and long-term items of expenditure, but it is short-term credit, so vital in lubricating a farmer's annual production, that is in short supply. The financial resources of OMIVAN are not really geared towards this, and farmers face stiff competition from those outside the p.i.s when applying for loans from the BNT and PDR. Average annual cost to a farmer for a 2ha plot (excluding purchase of major items such as serres) is around 800 to 1000TD. Although

income can be over 2000TD, farmers can be faced with short-term cash-flow problems, and it is in order to meet these that a fund for short-term credit needs to be provided.

d) Co-operative Centrale de Nebhana (CCN): Located in Sousse, this is basically a service cooperative organised by OMIVAN to provide seeds, machinery, fertilizer etc. to farmers on p.i.'s at reduced prices. Some p.i.'s operate their own service cooperatives, namely Bekalta, Chott Mariem, Teboulba and Moknine. These each have financial support from the IBRD, but in turn buy goods in bulk from the CCN.

Taking account of the CCN and credit facilities provided by organisations such as FOSDA and IBRD, the overall input system for the Nebhana scheme does appear to be well organised and comprehensive. The major criticism is the inadequacy of short-term credit. This, however, is as much a reflection of the national financial situation as a criticism of OMIVAN.

8.6.4 Output System

Marketing and distribution of produce are the key elements relevant downstream of the production system. At present, marketing is arranged on an ad hoc basis with no overall co-ordination or control. Produce from all Nebhana p.i.'s is sold by one of three methods:

i) on the farm plot or nearby roadside direct to consumer or wholesaler;

ii) transferred by individual farmer in privately owned trucks to local markets where it is auctioned;

iii) transferred by truck collectively (in small groups of farmers) to markets in Tunis and Sfax.

Such a pattern is suggested by responses to the questionnaire. These revealed that 66% of those interviewed pooled resources (usually a Peugeot truck) in order to take

produce to market; 16% sold goods on the p.i. itself and the remaining 16% used both methods. As to destination for Sahline produce, this tended to be conditioned by where the highest prices could be obtained. Most farmers took some at least of their produce to Sousse, but all those with access to motorised transport were prepared to travel to Sfax, Kairouan or Tunis if the price to be obtained in these markets justified the cost of the journey.

The potential benefits from organising the sale of produce have been realised by OMIVAN. Transportation and distribution costs could be reduced if goods were handled in bulk, and control over the prices received for produce could be strengthened. However, it is only recently that any attempts have been made to organise marketing and distribution of goods from OMIVAN irrigated areas. In the period June 1976 to May 1978, investigation of marketing from Nebhana périmètres irrigués was undertaken, sponsored by OMIVAN. Conclusions from this included recommendation for stations de conditionnement on each p.i. Such establishments would be responsible for collection of all produce from each p.i. and for its sorting and grading. Provision would then be made for the establishment of a small number of packaging centres which take 'conditioned' goods from each p.i. and organise its distribution and marketing. So far, however, progress along these lines has been confined to the beginnings of construction of a centre de conditionnement at Bekalta, and the construction of packaging and cold storage facilities at Monastir/Skanès airport.

Although the proposed system represents a considerable rationalisation of the existing marketing structure, it is unlikely that farmers will adopt it completely and channel all their output through it. Taking account of Sahel farmers'

reactions to cooperatives in 1969 and of the basically laissez-faire foundation of the Nebhana scheme, it is difficult to envisage farmers willingly letting go of all control over product marketing. Such a conclusion is reflected in farmers' responses when questioned if they would accept cooperatives on the Sahline p.i. (table 8.23).

Table 8.23 Irrigated Farmer Reaction to the Introduction of Cooperatives

	%	No.
No	20	6
Not fair	13.3	4
Service only	16.7	5
Marketing only	6.7	2
Yes	43.3	13
	100	30

Although 13 of the respondents said that they would accept cooperatives, none were particularly enthusiastic and all would agree only provided that cooperatives would not entail loss of individual decision-making.

In spite of the above comment relating to the proposed rationalisation of marketing and distribution of Nebhana goods, there is still scope for developments along the lines suggested by OMIVAN. If facilities such as packaging, cold storage and processing of goods were provided, farmers would quickly see their advantages and, provided that scope remained for free enterprise, there is no reason why such developments should not lead to general improvements in marketing.

One tool relating to the output system that has been neglected so far by OMIVAN, is that of a pricing policy. Advantages of such actions have been outlined elsewhere (Chapter

Three), and for a price policy to be effective it would obviously have to be organised on a national scale. Nevertheless, such action would be possible if the various irrigated area development agencies got together and organised a pricing scheme particularly for primeurs. At present, only the price of tomatoes is controlled; if other major products of the p.i's were included, particularly pimentoes, melons, potatoes and salad vegetables, better incomes could be guaranteed for farmers.

One of Dargouth's conclusions was that the various Offices de Mise en Valeur be grouped into five regional boards:

i) North East (Medjerda, Bizerte, Testour, Cap Bon)

ii) North West (Jendouba, Lakhmès, Badrouna, Bou Hertma, Ghardimaou)

iii) Centre (Kairouan, Sidi Bou Zid, Kasserine)

iv) Nebhana

v) South (Gabès, Medenine, Gafsa and Oases)

If such a reorganisation were to take place, output system on all p.i's could be better co-ordinated and thus improved.

8.6.5 Impact of the Nebhana Scheme

The Nebhana project has sought not only to improve agricultural production and increase exploitation of available natural resources in Tunisia, but also to increase rural incomes, help improve standards of living in predominantly agricultural areas and to stimulate the rural economy. In these respects, the Nebhana project has undoubtedly met with success.

In very crude terms OMIVAN estimate that approximately 5000 farmers benefit from Nebhana water. Each farmer has a family of, on average, five people, and he employs, again on average, two labourers each with families of 5 people. It can

thus be argued that some 75,000 people benefit from the developments of the Nebhana p.i.s. There are, however, official figures and it is likely that there is a certain element of over-estimation. Firstly, the 5000 farmers include landlords and tenants, both of whom do not benefit as directly or as much as landowners who work their own land. Secondly, although the nature of Tunisian irrigated farming precludes extensive mechanisation, an estimate of 2 workers plus landowner /tenant per farm plot seems excessive. Most plots on the Nebhana p.i.s are small (average just over 2ha) and do not require 2 full-time workers all year round to work the land. On the Sahline p.i. the average number of labourers employed per plot was 1.667; over 50% of those interviewed, however, employed none or only one permanent labourer. In spite of these moderated figures, it is nevertheless clear that the Nebhana project has benefitted a large number of people.

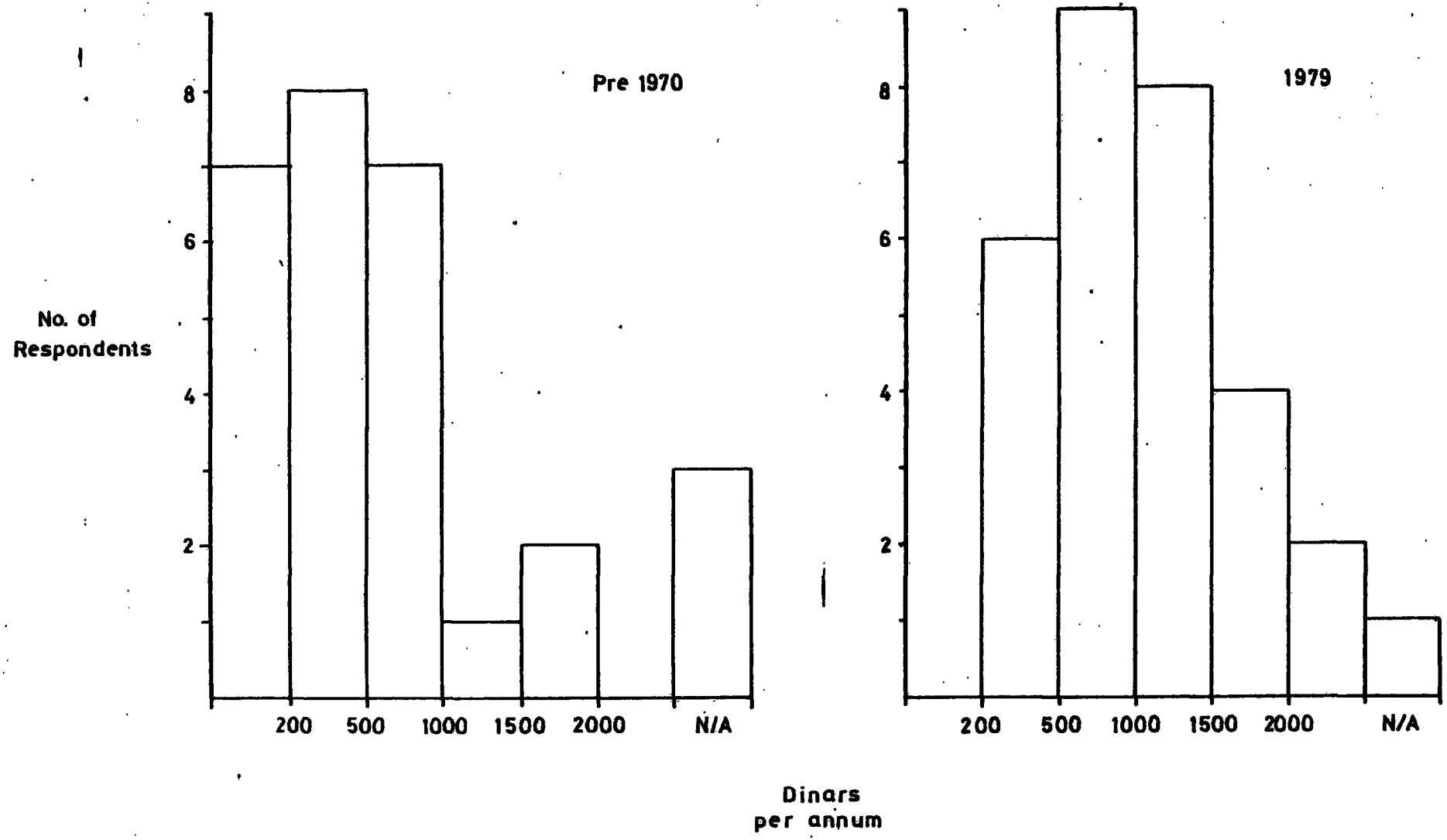
The most direct benefit of the development of the p.i.s. has been the raising of incomes. Prior to the development of the p.i., 50% of the farmers interviewed at Sahline earned less than 500TD p.a. (figure 8.6). Subsequent to its development, this proportion has dropped to 20%; now over 50% of those interviewed earned between 500 and 1500TD p.a. (30% 501-1000TD, 26.7% 1001-1500TD p.a.).

Wages for labourers, however, are as poor as in other agricultural areas. All but two farmers paid wages of 1.5TD per day plus food - ie the minimum legal agricultural wage. The advantage of employment on the p.i.s, however, is that it is virtually guaranteed all the year around. Regular water supplies and four crop seasons ensure a constant demand for labour.

All of the farmers interviewed believed that the

Fig 8.6

DISTRIBUTION OF FARMER INCOMES - SAHLINE P.I.
PRE 1970 AND 1979



development of the irrigated area had directly contributed to improvements in their own living standards. More cash was available to them and they were able to spend more on household and consumer goods (table 8.24).

Table 8.24 Main Areas of Respondent Expenditure With Increased Incomes

	No. of Respondents
House improvements	18
Foodstuffs	20
Household goods	21
Transport	10
Education for children	4
Land improvement	7

For two-thirds of those interviewed, household goods, house improvements and foodstuffs were the main items upon which increased incomes were spent. It is interesting to note, however, that only 23% used any of their income to reinvest in their land.

A key indicator of the success of the development of the irrigated area is that it has encouraged people to remain in the area and to continue working the land. Before the instigation of the p.i., 33% of the farmers interviewed would have moved had the opportunity arisen; a further 10% were unsure whether they would have or not. Since the development of the périmètre irrigué however, only one respondent indicated a desire to move, the remaining 29 expressed satisfaction with their situation and had no wish to move from the p.i. or the area.

Not only has the p.i. brought advantages to the individual farmers, labourers and their families, but it has indirectly benefitted the area as a whole. Increased household

incomes have inevitably stimulated the local economy. Analysis of questionnaire responses suggests that not all the increased income flows out of the area to Sousse or Monastir, but that many of the farmers families spend their incomes in the Sahline/ Sidi Ameur area (table 8.25).

Table 8.25 Major Destinations of Respondent Expenditure

	No. of respondents	%
Sahline/Sidi Ameur	14	46.7
Sousse and Sahline	7	23.3
Sousse	4	13.3
Sousse and Monastir	2	6.7
Monastir	1	3.3
Unspecified	2	6.7
	30	100

More specifically, respondents were asked a) did they think that the development of the irrigated area had led to any improvement in the area? and b) if,so, in what way? In reply to the first, 97% replied positively, with just one person dissenting. With regard to the second, 13 of the respondents saw the main improvement to be a general rise in living standards in the area (table 8.26). Although it was accepted that other actions by the government had contributed to this rise as well, the development of the p.i. was seen as one of the major factors.

Table 8.26 Ways in Which Respondents Perceived the Sahline P.I. to have Improved the Local Area

	No. of respondents
Improved general living standards	13
More money in the local economy	9
Created new jobs	2
Led to creation of new services	1
Contributed to improved health of the population	1

The second most significant improvement in the view of the respondents was the injection of more money to the local economy. This is very much the kind of advantage from agricultural development envisaged by Kotter in that it has such far-reaching consequences. It stimulates a demand for goods and services, encourages the supply of rural products and contributes to fiscal capital accumulation (Kotter 1974). Other improvements noted by respondents are also significant, despite the low number of people who mentioned them. Job creation is one of the major objectives of overall Tunisian development philosophy. It is in fact unclear exactly how many, if any, jobs have actually been directly created by the Nebhana project. Its development has, however, certainly consolidated agricultural employment in areas to which water has been distributed. Injections of increased amounts of capital to the local economy from the development of the p.i., leading to the stimulation of demands for goods and services, must also have created and consolidated employment.

That demand has increased (and been met) for new services was noted by one respondent. In particular, the wide range of retail outlets and small services in Sahline itself (such as a petrol station, blacksmith, photographic shop and two bakers), many of which are of recent origin, can be noted.

To conclude, there can be no doubt that the development of the Nebhana scheme is achieving many of the objectives originally defined for it. For those with land on a p.i., or for those who work on one, incomes have improved and become more secure; development of p.i's has stimulated local economies and helped raise general living standards. In agricultural terms, production has been increased, intensified and diversified; a wider range of fruit and vegetables is now available on the Tunisian market and for most months of the year, thus helping

to meet rising demands of an increasing urban population. But there are a number of issues that need questioning. In the first place, has the cost of the scheme been justified by the returns? It has been estimated that the development of each hectare on a périmètre irrigué has cost in the region of 5000TD, excluding both the cost of the Nebhana dam itself, and 'running costs' such as purchase of serres, seeds and fertiliser. In addition, contributions from international bodies, the IBRD and the Belgian government in particular, have exceeded 10M Dinars. It has been suggested that the Nebhana project could never have been judged a sound economic undertaking, and that motives for its development must therefore extend elsewhere (Karabenick 1969). It is suggested that the development of the Nebhana scheme from its inception has had political undertones. The Americans, during the 1960s, were keen to retain a strong interest in Tunisia. One of the means for doing this was to provide substantial aid to the national government. A major irrigation scheme requiring heavy capital investment was, from the American point of view, a sound proposition to help maintain the pro-western outlook of the Tunisian government.

From the Tunisian point of view, it could be argued that the development of a scheme such as the Nebhana project would lead to increased agricultural output, improve standards of living and consolidate employment, but more importantly the development of 12 périmètres irrigués, extending throughout the politically sensitive Sahel, had the advantage of presenting tangible evidence that the government really was doing something to assist the development of the country. Irrigation developments present immediate and very obvious returns for the initial investment. In addition, there is the psychological value of introducing new methods and techniques which give ordinary farm labourers the impression that rapid strides are being made in

agricultural development. It is thus suggested that the Nebhana scheme was instigated and developed primarily for the prestige benefits; prestige for both benefactor and the Tunisian government. However, if a country such as America is willing to provide money on such a basis, and the Tunisian government is prepared to support the project development for motives ulterior to the obvious economic ones, then there is no harm in its continuation, particularly as benefits do accrue directly to the population.

It could be argued that such massive investment would have been better directed at the consolidation of the existing economic/agricultural base. However, it is unlikely that donor agencies, such as the American government, would have agreed to aid on such a scale if it were not tied to a specific project. Secondly, there are advantages that result from the development of prestige projects. There is no doubt that the development of expensive irrigation schemes using foreign capital has positively affected the morale of the rural population and that the government has succeeded in its manipulation of the prestige accruing to such projects.

Although the basic concept of the Nebhana scheme can thus be accepted, there are criticisms of the project that have to be noted. The first is the serious waste of resources. Water distribution requires considerable improvement. Water is a scarce resource in Tunisia, and to waste 40% of the supplies from the Nebhana dam is criminal. The land ownership structure on the p.i.s is also unconducive to efficient utilisation. Some kind of rationalisation, particularly restriction of plot size, is required. Whilst gains made through utilisation of new cropping systems have been enormous, the necessary supportive measures to ensure maximum exploitation of the p.i. potential have been inadequate. In particular, research and extension work

need improvement.

In addition, reorganisation is required both up and downstream of production. Short-term credit, so essential to the smooth progression of agricultural activity through the agricultural year, is insufficient at present; but it has to be emphasised that this is not solely a problem of the p.i.s. Similarly, the rationalisation of marketing is required throughout the agricultural sector. But the existing organisation of OMIVAN lends itself to the development of an efficient and organised marketing system; such a system is as yet non-existent.

The Nebhana project is thus tainted by inadequate preparation and poor planning. Its operation and organisation leaves many areas for improvement. But is does appear that attempts are made to learn as time progresses, and mistakes are rectified, albeit slowly. The Nebhana project and the OMIVAN organisation do contribute significantly to Tunisian agricultural development. Its full potential has yet to be realised but, given time, this may change. Whilst the whole scheme cannot be justified on economic grounds alone, other advantages which have derived from the scheme cannot be ignored and do help to redress the economic shortcomings.

CHAPTER NINE

CONCLUSION

The Tunisian government has thus instigated a national rural development programme which seeks to project a co-ordinated, multi-sectoral planning approach to the complex of problems faced in the national rural sector. In so doing, the government has been striving to meet the ultimate objectives of raising the living standards of the rural population and of increasing their integration to the national socio-economic environment.

There are clearly many parallels between the Tunisian PDR examined above in the context of Monastir governorate, and the IRD model elicited in Chapter Two. In the light of this, an examination of rural development in Tunisia has thus served two purposes: firstly, it has enabled a detailed evaluation of the success of the rural development programme in Tunisia; and secondly, it has permitted an assessment of the viability of the IRD model outlined above. This chapter presents a summary of the conclusions that can be drawn relating to these two points.

A wide range of problems are encountered in the Tunisian rural sector. These vary from limited available resources to rural poverty to high unemployment and to poorly developed economic activities. Although partly due to the failure of previous attempts at rural development, such as the cooperative movement, it was the recognition of the complex and inter-related problems encountered in the rural sector that was the prime motivation for the adoption of the PDR by the Tunisian government in 1973. This reinforces the underlying need for any IRD programme; that to successfully tackle the problems of the rural

sector, a piecemeal approach cannot be taken; all elements are inter-related and as such must be tackled within the framework of an integrated development programme.

The key to a successful IRD programme has to be the institutional framework within which the programme is made to function. In this respect, Tunisia is very fortunate in having an existing territorial administration ideally suited to the implementation of IRD. It is a hierarchical administration with excellent communication channels between each level, and it has caused little difficulty to insert an organisation with overall responsibility for rural development into it.

The points in favour of the institutional framework utilised for the implementation of the Tunisian IRD programme are several. In the first place, the construction of 5 Year National Development Plans, based on consultation at all levels with all interested parties, provides an ideal overall guideline within which the rural development programme can operate, ensuring its complementarity with other aspects of national development. Within the National Development guidelines, however, the emphasis in rural development is very much on the regional (governorate) level. The creation of Offices d'Animation Rural in each governorate ensures that rural development projects and programmes are designed by a body with sufficient authority to meet the specific needs and requirements of that region, without having to stoop to too low a level of administration such that the whole operation becomes over-bureaucratic. Of great importance, though, is the insistence by governorate rural development officials, as evidenced in Monastir, on the need to maintain two way communication channels, both up and down the hierarchy.

Another positive factor with regard to the institutional framework is the fact that it is designed to coordinate and

implement a broad attack on rural development. The rural development office itself acts as a kind of 'King pin' at the centre of a web of relevant agencies and bodies. Being situated at the regional level, the office is able to maintain real, and often personal contact with officers in such agencies as STEG, SONEDE and the CRDA, thus ensuring that the design and implementation of the rural development programme really is integrated. Also, as the rural development office is under the direct and close responsibility of the regional governor, the head of the office carries sufficient authority to ensure its effective operation. In Monastir governorate, this is particularly true as the head of the rural development office ranks number three in the governorate and is a person commanding considerable respect.

There were, however, a number of potential weaknesses noted in the discussion of the IRD model relating to the necessary institutional framework. A number of these are evident in Tunisia, and in particular in Monastir. The greatest danger with any IRD programme is an over-extension of what are inherently limited resources in the attempt to approach as many problems as possible. This is particularly evident with regard to skilled manpower and financial resources.

Each Tunisian governorate is allocated 700 000 TD annually for its rural development budget. In face of the many rural problems, this is hardly adequate. But, having adopted an integrated approach to rural development, the government is obliged to undertake such a spread of capital. Two redeeming features can, however, be noted; the existence of the supplementary rural development fund available for specific projects in the less-favoured governorates, the capital requirements of which exceed the scope of the annual fund; and secondly, the fact that agencies such as STEG,

SONEDE and the CRDA, plus institutions such as the BNT and FOSDA receive money, part of which is annually budgeted for projects linked to rural development programmes. Such spreading of the financial resources does ensure that the Tunisian government is striving towards making the best use of limited financial resources. In order to further improve the situation, though, it is questioned whether there may be scope for readjusting national budget allocations and increasing the basic 700 000TD, particularly in governorates such as Kasserine, Gafsa, Gabès and Jendouba.

Greater problems are experienced with the distribution of skilled manpower. In the first place, personnel sufficiently qualified and experienced to manage rural development are in extremely short supply. Each governorate is equipped with sufficient staff to run the Offices d'Animation Rural, but it is at the delegation level and below that staff shortages are most acutely faced. It was noted in Monastir governorate that each delegation seat has a local rural development office staffed with part-time personnel. Rarely were these people sufficiently qualified to run such offices as effectively as they might. In addition, there is an acute shortage throughout Tunisia of trained extension workers for agricultural development.

Shortages of skilled manpower are accentuated by the need to spread rural development services to all governorates in order to meet the requirements of the IRD programme. Fortunately, this problem is one of the short-term only. Colleges have been established to train personnel for rural development and for extension work (eg. Ecole Supérieure d'Economie et de Promotion Rural, Moghrane), and over the next decade the problem will rapidly diminish. Meanwhile, staff shortages are being eased in certain locations by the

provision of foreign staff temporarily loaned to Tunisia (eg. Projet Tuniso-Belge/OMIVAN, Central Tunisian Rural Development Programme/USAID). One difficulty which the Tunisians must take great care to avoid in the future, is a bias toward various favourable locations from a work point of view. The situation must be avoided whereby it becomes difficult to encourage staff to work in the more remote areas of the country. If a system similar to that adopted by the Tunisian civil service is adhered to (ie. rotation of postings), the problem should be minimised.

A further potential problem with an IRD programme is difficult communications between relevant organisations. The requirements of IRD are such that close contact between the regional development authority and the technical agencies is essential. In Monastir governorate there was no evidence to suggest that liason between all interested and relevant bodies was not good. In addition to regular formal consultative and informative meetings, personal contact through informal channels was constant. Consequently, in Monastir it was clear that the formulation, implementation and monitoring of the rural development plan was well co-ordinated and well-balanced, thus demonstrating that effective communications, although a potential achilles heel, can be successfully established.

A major weakness specific to the infrastructural component of the Tunisian IRD programme is the strength of the political involvement. Whilst it is accepted that some degree of political involvement in IRD is both necessary and desirable, as figure 4.2 illustrates, political involvement in Tunisian rural development is excessively pervasive. Should the Tunisian political system be based on

true democratic representation, then this would not be such a problem, but given that its base lies in the single party structure of the PSD, then political involvement can at times lead to influence being brought to bear on decisions that may not reflect the people's best interests. Unfortunately, until there is a change in the national political leadership, a reduction in the political influence cannot be envisaged. This statement holds true despite recent moves to increase democracy through allowing candidates external to the mainstream PSD to stand at elections.

The Tunisian rural development programme is focused on three elements; the creation and consolidation of employment, vocational training and the improvement of rural living standards. As such, the programme does not correlate exactly to the model discussed in Chapter Two, but nevertheless, parallels may be drawn. In effect, the work involved in the employment and training elements correspond to the economic component, whilst the programme for the improvement of rural living standards corresponds closely to the social component.

The importance of developing the economic base in Tunisia is recognised. However, the emphasis in economic development is placed very definitely on the generation of employment. This has unfortunately resulted in what appears to be misplaced priorities in the direction taken by Tunisian economic advances.

In the context of rural development, agriculture continues to receive a great deal of attention both because of its fundamental importance to the rural and national economy and because of its importance in terms of employment. However, it is clear from an examination of agricultural development in Monastir governorate that there are many faults in this particular aspect of rural development. In the face of its

obsession with employment creation and consolidation, the rural development programme has failed to tackle root causes of the agricultural problem. Instead, piecemeal actions have been taken which will provide only temporary, short-term relief.

In particular, the emphasis on providing small-scale material aid for the small individual farmer is characteristic of this fault. All of the money allocated for agricultural development within the Monastir PDR budget is put toward such things as assisting farmers with the purchase of pumps, serres, new trees or animals. Whilst this ensures that farmers are able to continue working their land, the PDR does nothing to improve the fundamental difficulties facing the agricultural sector. Land reform, if only it goes as far as reducing plot fragmentation, is urgently required; crop diversification and improvement of the olive crop would greatly increase farmers' income and security; a co-ordinated marketing system would ensure that producers maximised incomes from their crops; a sensible and constructive pricing policy would provide incentives for increased productivity. Instead, the PDR appears to be approaching the rural problem at the wrong level of resolution. Whilst moves to promote the development of irrigated farming are to be applauded as being a step in the right direction, even this has been allocated the wrong priorities. Too much prestige has been attached to this form of agriculture and now human, physical and financial resources are being overstretched to meet the demands made by its expansion. This is particularly true of the Nebhana project. Whilst foreign involvement was considerable there was little wrong with allowing the development of such a non-economic prestige project, but

with foreign aid gradually being withdrawn, the Tunisian government must take great care that the project does not absorb too many resources to the detriment of the rest of the agricultural sector.

One of the distinguishing characteristics of the Tunisian economy is the continuing presence of state, co-operative and private sectors. All three are present in the rural sector but it is clear that the full potential of the state and co-operative sectors is not being realised. The OTD still remains owner/landlord of substantial areas of land inherited with the demise of the 1960s co-operative movement. At present, much of this land is in a state of limbo, with no-one really clear as to its future role. Greater use could be made of this land, particularly in the form of model farms as propounded in Chapter Two.

Whilst it is accepted that there is continued resistance to extensive implementation of co-operatives, those co-operatives which do exist at present, such as those instigated under project PAM482, are not being utilised to the full. In particular, co-operatives could be used to improve the marketing structure within the agricultural sector and to assist with the distribution of various inputs such as seeds and credit. Whilst many farmers exhibited a distrust of enforced co-operatives, the questionnaire survey revealed some degree of willingness to participate in co-operatives with limited powers and functions.

Although there have therefore been misplaced priorities in the actions taken in the agricultural sector within the rural development programme, there have, nevertheless, been positive actions taken. It cannot be

denied that the provision of grants to small-and-medium-sized farmers has certainly enabled these people to consolidate and improve their farming and productivity. Overall, however, the improvements have been superficial and are finite in scope, and in many instances inadequately implemented (for example the olive tree rejuvenation and fruit tree planting programmes). What is needed is extensive policy re-orientation such that the fundamental problems of the agricultural sector are tackled.

Misplaced priorities are also very much in evidence with respect to actions taken by the PDR in the rural industrial sector. Again, this can be attributed to the obsession with creating and consolidating employment. The inception of the 1972 and 1974 Investment Laws have contributed greatly to a severe imbalance in the Tunisian industrial sector. The problem with industries established under these two laws, particularly that of the 1972 Law, is that industries are created primarily to generate employment, any other benefits are secondary, and frequently not given any consideration at all. Consequently, the full potential of rural industrial development is not being realised.

In Monastir governorate, the unbalanced development is clearly manifested in the present and increasing dominance of the textile sector. As the area has a long history of textile production and has a plentiful supply of cheap and skilled labour, firms are anxious to establish themselves here. This has unfortunately created an over-dependence on textiles in the area, making it very vulnerable to market fluctuations.

What is urgently required in the rural sector is

the development of many small-scale industrial concerns at the village level. A limited number of such concerns are present in some villages, but nearly all are textile based. Instead, encouragement should be given to electricians mechanical trades, workshops, and small-scale manufacture of goods other than textiles. The provisions of the 1974 Investment Law plus the organisation of the PDR provide an ideal medium for the stimulation of such industry, yet the opportunity is at present being neglected. Similarly, the encouragement of more retail outlets at the village level is being ignored, despite the obvious and fairly immediate need for such developments.

As the questionnaires clearly showed, there is no shortage of funds for small-scale rural investment in one form or another, nor is there any reluctance by residents to keep capital in the villages. In light of this, the PDR really should be taking stronger steps to encourage small-scale rural industrialisation and combining this with moves to diversify the rural industrial base of the area.

Despite the weaknesses noted in the agricultural and rural industrial developments, it is nevertheless clear that since the instigation of the PDR the financial position of rural residents has definitely improved. Very few, if any, people in the rural areas of Monastir governorate are living in a position of absolute poverty and the work of the PDR has certainly done much to ensure that family incomes have been consolidated and in many instances improved. Admittedly one of the significant factors in this has been the increased ability of rural residents to exploit the employment opportunities of the nearby towns and tourist industry. Nevertheless, agricultural improvements, particularly the extension and development of irrigated

areas and the extension of industrial employment opportunities, even if they have virtually all been in the textile sector, has ensured increased rural incomes.

One of the most important factors relating to the increase in rural incomes, however, has been the fact that rural residents tend to circulate much of this income within the rural economy. There is no evidence to suggest substantial outflows of capital to urban areas. This is particularly noticeable in the way in which residents get the bulk of their requirements either at the village itself or at one of the small rural towns, in the proliferation of house construction and extension and, in certain instances, in the willingness to invest in rural activities such as chicken farms and small factories. But it is in this area that the PDR exhibits one of its greatest faults; its ineptitude at encouraging, to the maximum of its ability, rural residents to make greater use of their income within the rural economy. As stated above, the PDR really is in an ideal position to encourage rural investment in retail outlets, rural trades and small-scale industry. The long-term multiplier benefits of such developments would be substantial, but the opportunity of exploiting this potential is being missed. The role of the PDR should be to encourage, channel in the right direction and focus rural investment on the most beneficial projects; this it is failing to do.

One of the tools available to the PDR to channel rural investment is a spatial development policy utilising rural growth centres as outlined in Chapter Two. Although recognition has been given to spatial planning, attention in Monastir has been focused on two development axes. As discussed in Chapter Six, these axes are useless as a planning tool and the governorate authorities are simply

using them as a justification for the continued concentration of resources in the coastal region of Monastir. In terms of rural development, if the PDR could focus attention on the rural delegation seats as sub-regional growth poles, substantial advantages could be gained for the rural sector of Monastir governorate.

Again relating the practical experiences of rural development in Monastir to the model discussed in Chapter Two, the above discussion illustrates the viability and necessity of an economic component, which of necessity has to be related to a spatial component. Unfortunately, in the context of Monastir governorate the full value of the economic and spatial components have not been utilised, primarily as a result of misplaced priorities. By focusing on employment generation, the PDR has not sought long-term remedies to the rural problem, but has merely applied short-term palliative measures. The actions taken have indubitably had immediate benefits, some of which will be long lasting, but it would have been of greater value in the long run had the PDR reorientated its policies and tackled some of the fundamental problems of the rural sector which would have had far more extensive beneficial effects in the long-term (including employment creation and consolidation).

Implicit in the whole argument in support of IRD as a rural development strategy is the need to see rural development not only as economic development, but also social/welfare improvement. In the case of Tunisian rural development this has certainly been the case, and rural social and economic development has been, to a certain extent, complementary and integrated. Overall, however, it is clear from discussions in previous Chapters that the PDR has encountered far greater success with its programme of improving

rural living standards than it has with its economic development strategies.

Many of the elements of the social component are in a well advanced state of development in the rural sector of Monastir governorate. This is particularly true of the education and health facilities. The level of advancement of these services is, however, more a result of national development policies instigated by Bourguiba after independence than a result of actions taken by the PDR. This does not detract from the importance of the fact that such facilities have been as fully developed as possible, given the limited available resources.

In other areas the PDR has played a crucial role in the improvement of the rural social environment. The greatest proportion of the PDR budget is devoted annually to the amélioration des conditions de vie and, as a result, very noticeable developments have taken place. In particular, mention can be made of improvements in the quality of rural housing and the provision (in conjunction with STEG and SONEDE) of water and electricity to villages. Also, the provision of community facilities such as maisons du peuple and maisons des jeunes have had important beneficial effects on rural village life. Yet despite the positive advances that have been made, there are again a number of faults and weaknesses in the overall programme.

As with the economic programme, one of the greatest faults has been the allocation of priorities. There are still a number of villages in Monastir governorate with inadequate water supplies and no electricity yet, in the villages of Menzel Khir and Sidi Bou Othman, new sports complexes are planned for development in the near future. Similarly, in 1978 nearly 50% of the PDR living standards

improvement budget was spent on improving inter-village pistes and roads despite the fact that the streets in all villages are little better than open sewers. There are also instances where money has been allocated to the right jobs but has been spent inefficiently. This is true, for example, of public water distribution. There are many instances throughout the governorate of humans and animals sharing water troughs which are situated in a sea of mud which has resulted from broken water pipes or ineffective water taps. There is no doubt that the overall strategy for social development within the PDR is along the right lines, and that as a result of the work initiated by the PDR, rural living conditions have improved substantially over recent years. However, it is essential that PDR officials take greater care of their limited resources and give greater thought to their allocation of priorities.

The final component of the IRD model is the infrastructure component. Within the context of the Tunisian PDR, specific attention has not been focused on this, although it has been an inevitable part of other aspects of the rural development programme. Consequently, it was found in Monastir governorate that infrastructural developments took place in accord with other social, economic and spatial developments and as a result were well integrated to the whole programme. The lack of a formal infrastructural component within the Tunisian PDR has not therefore been detrimental to the whole programme. This does not, however, imply that such would always be the case in all IRD programmes; there are some elements of infrastructure which have been incorporated into the general improvement of rural living standards programme in Monastir which, in another context,

may have to be considered separately. In particular, the road and piste construction programme can be referred to. In terms of the IRD model therefore, there is no justification for the removal of an infrastructure component.

Overall the Tunisian IRD programme, as examined in the context of Monastir governorate, is basically sound and reinforces the viability of the model described in Chapter Two. Inevitably, the Tunisian programme has both its strong and weak points. Throughout the programme there are several instances of dubious allocations of priorities to specific projects, particularly within the economic component. Indeed, the structure of the whole economic component is weak with its excessive concentration on the employment problem. However, the basic structure of the PDR, based on the existing Tunisian administrative/ institutional framework, with specific consideration given to social, economic and spatial elements of development, all within a planned and co-ordinated whole, is successful and has potential for even greater success if a few modifications, suggested above, are included in the programme.

The strongest indication of the success of the PDR lies in the reactions of respondents interviewed in five villages of Ouardenine delegation to the rural development programme. Overall reactions were extremely favourable, with most respondents pleased with the direction and progress of rural development. Inevitably there were differences of opinion expressed over specific issues such as the quality of certain facilities, but the fact that so many people expressed a preference for village life and all its qualities is the strongest indicator of all of the overall success of the PDR. Villages in Monastir governorate are

now becoming desirable places in their own right in which to live and residents are increasingly choosing to live there in preference to nearby towns.

It has to be emphasised that the study has only been confined to Monastir governorate and as such some of the above conclusions can only be applied to this area alone. Nevertheless, it is felt that evidence collected strongly suggests that the structure of the Tunisian rural development programme is basically successful and, when applied to other governorates in the country, provides the means for a general improvement and development of the national rural sector.

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APPENDIX I

Questionnaire put to respondents in the villages of Maatmar, Mesjed Aissa, Menzel Khir, Sidi Bou Othman and Oued Zibs.

1. Sex
2. Marital Status; if married, number of children
3. Age of respondent
4. Place of birth

HABITAT

5. Is the house in which you live: rented?
   owner-occupied?
   if owner occupied, how long for?

   if rented, how much is the rent?
   Where does the landlord live?

6. How many people are permanently resident in your house?
   Of which, how many are children?
   Are you all of the same immediate family?

7. Details of the house:
   Age
   any recent additions
   number of floors
   any courtyard
   how many rooms
   does it have running water
   hot water
   electricity
   bathroom
   separate kitchen
   are animals still kept within the house

EDUCATION

8. Did you go to school?

   If so, primary?
   secondary?
   other? (please specify)

9. Can you:

   read
   write

10. What languages do you speak?

    Arabic
    French
    English
    Other

OCCUPATION

11. What is your occupation?

12. Where do you work?

13. How many hours do you work a day?
How many days do you work a week?

14. How much do you earn?

15. Would you like to change your occupation?
(If 'housewife', Would you like to become employed?)

If not, Why not?
If so, Why?
to what?
Where would you be prepared to go?

16. Do you have any relatives who have left the village, either temporarily or permanently, in order to seek work elsewhere?

If so, Where are they?
What are they doing?
how often do they return to the village?
do they send money back to the village?
Why did they leave?

17. Does your family own any land?

If so, how much?
is anything else cultivated apart from olives?

AREA ECONOMY

18. How many people in your household earn money?

19. Where do the others work?
What do they do?

20. What is the approximate income of your household?

21. Do you buy anything here in the village?

If so, what? fresh fruit and veg.?
meat?
fuel for cooking?
bread?
oil?
sugar?
semolina?
others?

22. How much do you estimate is spent by your household in the village each week?

23. Where do you go for other purchases?

Ouardenine	sometimes/frequently/never
Monastir	"
Sousse	"
Tunis	"
Sahline	"
Djemmal	"
Other	"

24. For what do you go to other centres?

25. What is your approximate expenditure in other centres per month?

26. Where would you go for the following:

Bank
TV/Radio repair
Chemist
Post Office
Furniture
Dentist
Insurance
Market
Clothes

27. If better services were provided in Ouardenine, would you be prepared to make greater use of the town?

ENVIRONMENTAL PERCEPTION

28. Do you think that there have been any changes in the village over the past few years?
(Yes or No)

29. What do you see as the most important changes?

31. Do you think that the village as a place to live is now:
better?
the same?
worse?

32. How would you describe the following as they exist in the village today?
(Good, bad, or inbetween)

Water supply	Housing	Living Standards
Electricity supply	Bus service	Medical services
Roads	Employment opportunities	
Drainage		

33. What do you see as the main problems in this village - if any?

34. What do you see as the good things about this village - if any?

35. What changes or improvements would you like to see made here over the next few years?

36. Would you prefer to live somewhere else rather than in this village?
If so Where and Why?

APPENDIX II

Questions additional to those of Appendix I put to respondents who declared a full or part-time farming interest

1. Is the land on which you work:
   - owned by yourself?
   - rented by yourself?
   - owned by somebody else but worked by you with a share of the returns?
   - owned by the state
   - owned collectively

2. How many workers are employed on the land on which you work, and what are they paid?

3. What is the area of land which you farm?

4. What crops do you produce?
   What livestock, if any, do you raise?

5. Where are the goods that you produce sold?
   How much of the goods are consumed by your household?

6. Approximately how much do you earn per annum from the land?

7. How many people does this have to support?

8. Do you know if it is possible to get agricultural credit?
   If so, where from?

9. Would you like to see agricultural credit made more accessible?

10. What would you use agricultural credit for if it was made available to you?

11. Are there any particular changes which you would like to see made in the agricultural sector?

12. Would you like to see the reintroduction of cooperatives?
    If so, why?
    If not, why not?

APPENDIX III

Questionnaire put to farmers on the Sahline Périmètre Irrigué .

A

1. Age

2. Marital status
   number of children - if any

3. Where do you live?

B The Land

1. In which zone is the land on which you work?

2. The land which you work on, do you:
   i) own it - if so, how many workers do you employ and what do you pay them. Is there some kind of sharing arrangement?
   ii) rent it - if so, how much do you pay for rent?
   iii) work on it for someone else - if so, by what arrangement?

3. For how long have you owned/worked this land?

4. When did you start using Nebhana water?

5. Before using Nebhana water,
   - what crops did you grow?
   - how many regular workers were employed on your plot of land?

6. Do you retain any of the old crops?

7. What is the area of land that you farm?

8. How many "grand sous-serres" will you have for the agricultural year 1979/80?
   How many "grand sous-serres" did you have for the agricultural year 1978/79?
   How many "petit sous-serres" will you have for the agricultural year 1979/80?
   How many "petit sous-serres" did you have for the agricultural year 1978/79?

9. Where and how do you market your produce?

10. Would you like to see a reintroduction of cooperatives here on the périmètre irrigué ?
    If not, why not?
    If so, why?

11. Would you like to see any changes made here on the P.I.?

C OMIVAN

1. Are you happy with:

   i) the credit facilities offered by OMIVAN?
   ii) the extension services offered by OMIVAN?
   iii) the general administration of OMIVAN?
   iv) the price of Nebhana water?

2. Would you like to see any changes in the OMIVAN set-up?

D Effects of OMIVAN

1. What was your income per annum before the development of the p.i?

2. What is your income per annum now from the p.i?

3. Do you have any other sources of income?
   if so, what?

4. How many people does the income have to support?

5. If your income has increased, what sort of things is it spent on?

   - the house building
   - foodstuffs
   - household goods
   - car or mobylette
   - others (specify)

6. Where do you spend the bulk of your money?

7. Do you think that OMIVAN has improved your standard of living?

8. Before the development of the P.I., would you have liked to have moved from the area or changed jobs?

9. Now, would you like to move or change jobs?

10. Do you think that OMIVAN has benefitted the area as a whole?
    if so, in what way?